



LET US ENCOMPASS THE EARTH WITH A NEW ORDER OF TIME

VOL. X

SECOND QUARTER, 1940

No. 2

SYMBOLIZING with vitality and color the new sense of order and unity which the adoption of The World Calendar will send pulsing through every department of modern life, is a series of 18 pictures which have just been developed for The World Calendar exhibit in the New York Museum of Science and Industry.

These pictures, reproduced from paintings especially made for the purpose, portray man's efforts to work out a system of measuring Time which will enable him to carry out his various pursuits in orderly fashion.

Starting from man's earliest time-sense—the separation of day and night—the pictorial story presents the different milestones of the journey through the years. It pauses to depict such historic and significant moments as the working-out of the solar calendar by the Egyptians from their study of the sky and the shadows thrown on the desert by the pyramids. Julius Caesar ponders his adaptation of the solar calendar and decrees the leap-year day with the irregular months we now have. Augustus rearranges the Julian calendar on the basis of the four seasons. Constantine introduces the week with Sunday as a day of worship. And finally Pope Gregory consults the scientists of his day on an adjustment of the calendar toward a closer approximation of scientific accuracy, but which failed to adjust the irregularities of the months, the haphazard arrangement of which complicates our activities today.

Most dramatic of all are the pictures which show the bearing of The World Calendar upon every phase of modern living. In industry, in business, in travel, in work and play, the even divisions of days, weeks, and months are seen to bring order and system into a complex world.

With a uniform year of *exactly* 52 weeks, four equal quarters, and two equal half-years, with the Year-End Day, the *world holiday*, as the keystone, cementing greater unity and friendship in a symmetrical arch of Time, the pictures show the diverse streams of life flowing smoothly along, more harmoniously, more confidently, more colorfully than ever before.

Journal of CALENDAR REFORM

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1940

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CHARLES C. SUTTER, Editor

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RADIO “GALLUPS” ALONG

By MARK HAWLEY

News Commentator, Mutual Broadcasting System

UNLESS you've been surveyed by *Fortune*, queried by Gallup or rated by Crossley you haven't a decimal point to stand on in this year of Our Lord, 1940. Therefore when Miss Elisabeth Achelis asked me to conduct a survey of my profession on "how-do-you-like-the-idea-of-a-World-Calendar-or-don't-you?" it all seemed quite in keeping with the trend of cross-sectionitis. Where could one turn to find a more survey-conscious group than my poll-doting brethren of radio? Where could one hope to find a group of business men so concerned with time? And finally but not fittingly, where, outside of Washington, could one find a group so willing to express a point of view, assured that it would get by the board of censors? Radio was a natural.

Armed with a few such encouraging thoughts, we dispatched a questionnaire to a large number of radio and advertising people. Unlike the census takers, we were not handicapped by questions pertaining to income. Therefore our results are frank and interesting, from General Harbord's (of the RCA Harbord's) "I have not had an opportunity to study this in detail but it does seem like an interesting idea," to a two-page letter from E. K. Bauer, business manager of WLW, Cincinnati, who not only reacted favorably but contributed some very constructive suggestions. This is the questionnaire which was sent out to a representative group of radio and advertising executives throughout this country.

Does the idea of a simplified and stabilized calendar appeal to you?.....

Would you favor the calling of an international conference by the United States looking toward definite legislation by nations for a revision of the calendar within the next five years?.....

Do you believe the equal-quarter World Calendar would benefit radio?.....

In what way would The World Calendar aid in your particular work?.....

Name..... Station or Company

Address..... City

Comments:

Of the 541 queries mailed, 127 were answered. To my unarithmetical brain that still makes 23 per cent, which represents a fairly high response even to the miracle men of radio. Among those who cared to commit themselves, 81 per cent gave their unqualified support to The World Calendar, and 12 per cent said they didn't like the idea at all. Thirty-six per cent took the trouble to send additional comments along with their approval,

four were undecided about the whole thing, and four, it seems, had moved to other addresses.

In order to acquire a true cross-section of the radio industry's reaction to The World Calendar, names were carefully selected from the multitude of departments and branches of the business.

Reflecting the attitude of business management and accounting to the inquiry: "In what way would The World Calendar aid in your business?" came the following answers: "Simplify records" . . . "statistically" . . . "in billing accounts and programming." "Making comparisons of periods possible" . . . "billing, comparisons, scheduling, programming and stabilization" . . . "simplify bookkeeping" . . . "fiscal statements, better comparisons, stabilize holiday schedules" . . . "preparing the annual budgets."

From the radio program departments whose task it is to fill the hours of the day with entertainment came the following response: "Make schedules more uniform" . . . "simplify program scheduling" . . . "stabilize schedules" . . . "Standardize bookings, assignments and commitments" . . . "mainly by keeping holidays on the same day" . . . "Equalize broadcast time units" . . . "simplify scheduling and the entire industry" . . . "No more confusion of dates. More accuracy with less memory effort."

Since a radio station lives by the TIME it sells, the sales department is its life blood. Here is the salesman's answer to the same question: "Simplify scheduling and selling" . . . "Fewer sponsors would desert the air in the summer time—I'm all for you" . . . "Unify yearly schedules for respective clients" . . . "any move toward time stabilization will simplify radio's contractual calculations" . . . "More systematic operation." . . . "billing and scheduling" . . . "More efficient." . . . "Save time—work." "Simplify recollections and prediction of dates." . . . "Save time and useless mental effort."

If sales represent radio's life blood, the advertising agencies are the red corpuscles. They buy the time which radio has to sell. A few of their answers to our questionnaire are as follows: "Eliminate chance and error in buying radio facilities" . . . "Easier to compute radio time contracts" . . . "Uniformity of contracts, anniversaries and holidays" . . . "Computing starting and ending dates of (advertising) campaigns" . . . "Equalization of quarters, i.e., month-dates always on same weekdays." . . . "Making each year comparable, i.e., each month and each week comparable to that of preceding year." "Uniformity" . . . "the fact that all quarters are the same—is it" . . . "Simplifying (advertising) schedules and contracts."

While commenting favorably on The World Calendar and expressing the wish to see such a simplified system in use, Mr. Leon Levy of WCAU, Philadelphia, and Mr. E. B. Craney of KGIR, Butte, Montana, added that they used the 13-month calendar as the only way they had found to make accurate comparisons. Pertinent are the following miscellaneous comments which came as the result of our questionnaire: Mr. W. K. Bauer, WLW,

Cincinnati, Ohio, says: "I had never given any particular thought to the calendar as it affects radio, simply taking for granted certain inconveniences and working out my own problems. Now having thought about it, I will be interested to know the results of your survey."

Mr. John F. Pratt of WGAR, Cleveland, Ohio, comments: "Would not benefit radio any more than all business. Everybody benefits." From Mr. Harold A. Safford of WLS, Chicago, Illinois, comes the statement: "There is without question a definite need for a stabilized calendar, but until your movement brought this problem to focus, there seems to have been no concerted action taken to correct the present haphazard calendar system." A. J. Mosky of KGVO, Missoula, Montana, says: "Save a lot of time and confusion. Present calendar very unsatisfactory."

Mr. Frank Burkner, KFVD, Los Angeles, writes: "This appeals to us very much—will be glad to do anything we can in its promotion." Mr. W. P. Hood, KFFT, Wichita Falls, Texas, sent in this statement: "With few exceptions, President Roosevelt's alteration of the Thanksgiving date was favored in this area, which would indicate a general disposition toward calendar revision through the entire year. Would like to know more about your plans." Miss Margaret Cuthbert, National Broadcasting Co., remarks that: "The World Calendar benefits to radio are too numerous to mention on such a small card." From Mr. G. F. Ashforker, WHBZ, Muskegon, Michigan: "It looks like a good idea." Mr. C. W. Corkhill, KSCJ, Sioux City, Iowa, states: "Personally—can see nothing but the benefits that would accrue with the new calendar."

Mr. Simon Gellard, WLTH, New York City: "Listening to the radio is a matter of habit and anything that will stabilize time will enable listeners to remember to tune in their favorite programs." Mr. Clay Morgan, NBC, New York City: "It is one of those things so simple, easy and sensible that it will take years probably to put it over." Mr. George W. Smith, WWVA, Wheeling, West Virginia: "I believe any plan that would standardize any time-unit, could not help but benefit radio broadcasting." Mr. W. E. Williams, WGRM, Grenada, Mississippi: "Why wait five years? Do it now." Mr. Harry Baldwin, Treasurer, Canadian Broadcasting Corp.: "I think Miss Achelis' plan has the real advantage of being less shocking to conventionalists than other systems which ignore the Gregorian and ancient arrangements of the months."

Time—an invisible but costly commodity which has become the foundation of a great new industry, that pays its employees the highest average wage in American business. Forty-four million radios have brought 100 million Americans into intimate contact with the rest of the world. The only industry which literally sells TIME over the counter has expressed itself clearly in favor of The World Calendar. This should be an indication The World Calendar Association is championing a winning cause.

DR. GAJARDO REYES' LEADERSHIP

Extracts from letters in tribute to the life and work of the late Dr. Ismael Gajardo Reyes, President of the Latin-American Committee for The World Calendar.

Dr. Ismael Gajardo Reyes died in Santiago, Chile, on October 24, 1939. A tribute to his progressive leadership for calendar reform by the Director of The World Calendar Association appeared in the *Journal of Calendar Reform*, 1939, p. 167. Since that time letters have been received from numerous friends and associates praising his tireless energy for calendar reform. The extracts given below indicate the wide range of this appreciation.

BACKGROUND AND PERSONALITY

By H. E. DON AGUSTIN EDWARDS

Former Chilean Ambassador to Great Britain

CHILE lost a great citizen and scientist when the designs of Providence deprived my country of the remarkable personality of Dr. Ismael Gajardo Reyes.

At the age of 63, when there was still a great deal to expect from his powerful mentality, he passed away after having accomplished, in the sphere of hydrography, astronomy, history and calendar reform, achievements so remarkable that he succeeded in winning the respect and admiration of the highest scientific authorities in each and every of those sciences.

As a sailor, he left an unparalleled record in navigation discoveries in the unexplored seas, channels and estuaries of Southern Chile, one of which bears his name.

The brilliant cadet of the Chilean Naval School of 1887, completed his training in the British Navy and showed how perfectly he had assimilated the education received in accomplishing, when only a lieutenant, what others could have been proud to achieve much later in their career. His failing health prevented him from continuing the naval activities so brilliantly begun.

Sea life was too rough and exhaustive for his feeble body; but Navy's loss was Science's gain, for, on being forced to retire, he gave himself completely to scientific work, and, deeply attracted and interested in seismic phenomena as well as in the sidereal system, he entered the Seismological and subsequently the Astronomical Observatory.

For some years he edited the Annual Report of the Chilean Astronomical Observatory and he published some interesting pamphlets, among others the one entitled: *El Universo Sideral (The Sidereal Universe)*, and another: *Una visita a los Planetas (A Visit to the Planets)*. No less interesting was his contribution to prove that all predictions of seismic movements had no scientific bases, a work which was particularly useful in Chile

where so many theories have been given importance to prove that earthquakes could be announced and their precise causes discovered.

All this work of Gajardo Reyes, besides many others which would deserve a more detailed and profound examination, led him naturally to join the ranks of those who believe that World Calendar Reform is a necessary step for a more rational regulation of the world, its life and activities; and, as it has already been said by Mr. Charles C. Sutter, he was the untiring leader who convinced the Chilean Government of the advisability of placing before the League of Nations in 1937 a "draft convention" for calendar reform.

As the Chief Delegate for Chile in the League of Nations at that time, it was my privilege to present that "draft convention" to the League, and it is my honest duty to recognize now that I would have been unable to accomplish my task without the advice and guidance of Gajardo Reyes.

He was the soul of the movement and never did he fail to send me a word of support, encouragement and enlightenment to help to dispel the doubts and opposition which, naturally, arise whenever a new idea or reform of any kind is attempted.

Let us hope that with his death the movement to promote this reform will not be buried with him, but, far from that, the very fact that he is no longer among us will stimulate those who remain alive to continue the work as the highest tribute we could pay to his untiring and magnificent efforts.

* * * * *

INFLUENCE ON LABOR

By GASTON GOYENECHÉ M.

*Chilean Industrialist and Honorary Vice-President of the Latin-American Committee for
The World Calendar*

TO detail the work of that select spirit that was Ismael Gajardo Reyes is to make a report of continuous successes and efforts during more than 55 years of an industrious life.

As mariner, geographer, or astronomer he was able to stamp his work with that seriousness and altruism which only outstanding men possess.

I had the privilege of counting myself among his friends during almost his entire lifetime, and I could observe closely the intelligence, the enthusiasm, and the tenacity which he put into every task he undertook.

I remember as if it were today the ardor he showed when he explained to me, and when he tried to convince me of the benefits of every kind that the reform of the calendar would bring to humanity; and when he asked me, as an employer representative of the Government of Chile to the Pan American Labor Conference held in Santiago in January, 1936, to present a motion to the effect that that Conference approve the reform. I remember also the enormous satisfaction that I experienced when I had the plea-

sure of announcing to him that the motion presented by me had been approved unanimously by the Republics represented.

When Ismael Gajardo requested some help, it was impossible to deny him collaboration. He was so sympathetic, convincing, and sincere that there were no arguments that could be brought against him. This has been, without doubt, one of the secrets of his success in life.

Ismael Gajardo Reyes was one of those triumphant beings who in dying deprived us of enormous energies and enthusiasm which will be difficult to replace. It is only to be regretted that Divine Providence did not see fit to afford him the happiness of having seen fulfilled the greatest of his aspirations: the definite adoption of the reform of the calendar.

* * * * *

INTERNATIONAL ACTIVITIES

By C. DAVID STELLING

Director, Rational Calendar Association, London, England

I NEVER had the good fortune to meet Dr. Gajardo Reyes, but we corresponded across 4,000 miles of ocean and I was always deeply aware of the zeal and enthusiasm with which he led the movement for calendar reform in Latin America. It was thanks to his personal efforts and the pertinacity with which he pursued the end in view that, on the initiative of the Chilean Government, the League of Nations Council adopted the significant resolution on calendar reform which embodied The World Calendar as the model calendar aimed at.

In my talks with Don Agustin Edwards, the Chilean Ambassador, in London, and with representatives of other South American nations at Geneva, I was made to realize that behind their official advocacy for reform lay a movement which could only have gathered the momentum which it had by that time acquired under the inspiration of some single-minded leader. That leader was Dr. Gajardo Reyes who, as a result of his searching and scholarly examination into the whole question, had acquired an enthusiasm for the cause which carried him past all obstacles.

Those who are fighting the battle for sane reform will long remember his splendid work and will be heartened and inspired by the success of his crusade which not only won for The World Calendar the official support of Latin-American nations, but played so important a part in obtaining the endorsement of the League of Nations Council for the reform.

More than this, those of us in Europe who under the vigorous leadership of Miss Achelis had been engaged in many years of spade work at Geneva and in the capitals of Europe, recognize that it was in the end, as an immediate result of Dr. Gajardo Reyes' energetic pioneering in South America, that the Council of the League of Nations brought calendar re-

form into the region of practical international politics by its endorsement of The World Calendar in submitting it to its members.

* * * * *

WORLD VIEWPOINTS

By ALBERTO CRUCHAGA O.

Chilean Diplomat

THE campaign, which with untiring constancy has been carried on for years in order to achieve the fulfillment of the proposed reform of The World Calendar in a manner already well known to the learned circles of all countries, had in the erudite and indefatigable Chilean, Don Ismael Gajardo Reyes, who died in October, 1939, a well-informed as well as an enthusiastic participant.

The solid and vast knowledge of Dr. Gajardo, a mariner in his early years, later specializing in astronomy, meteorology, and mathematics, and always passionate in his study and fervent in his admiration of the exact sciences, qualified him in a privileged way to perform with efficacy and distinction the task which in the service of calendar reform he imposed upon himself.

The high and well-merited tribute paid to Dr. Gajardo by his colleagues in other countries—who, like him, moved by their convictions and enthusiasm, have put themselves in the vanguard in the struggle to bring about the reform of the calendar—is echoed by the gratitude and sympathy of the fellow countrymen and friends of this meritorious Chilean.

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General Eduardo Hay, Minister of Foreign Affairs of Mexico, states: "In deploring the loss of such a valiant element in the effort to implant The World Calendar as Dr. Gajardo Reyes was, and in wishing cordially that his successor may continue with equal success in the work undertaken by him, I offer you the assurance of my high consideration."

"I regret to learn," writes Dr. L. S. Rowe, Director-General of the Pan American Union and Honorary President of the Latin-American Committee for The World Calendar, "of the death of Dr. Gajardo Reyes, founder of the Latin-American Committee for The World Calendar. Through his able and devoted work not only at the head of the organization but also as the guiding spirit of the Chilean Committee he had accomplished much for the attainment of his goal. I feel sure, however, that because of the interest that he has aroused someone will carry on his work without setback."

"I agree with you," declares Dr. Alfredo de Castro, Minister of Uruguay to Belgium and Honorary President of the Latin-American Committee for The World Calendar, "that a great void has been left by the death of Dr. Gajardo Reyes, President of the Latin-American Committee for The

World Calendar, and I hasten to present my very profound condolences."

"We have lost in Dr. Gajardo Reyes," declares Father Eugenio V. Rosso, Acting President of the Latin-American Committee for The World Calendar, "our most devoted co-worker in South America. He worked disinterestedly for our ideal, The World Calendar, which he had always hoped to see fulfilled before his death."

The Chairman of the Argentine Committee, Dr. C. D. Perrine, writes: "I join with you in lamenting the untimely death of our Latin-American President, Dr. Gajardo Reyes. I fear that it will be impossible to find his equal. But of course you must try."

Dr. Enrique Gil, eminent Argentine attorney, says: "The death of Dr. Ismael Gajardo Reyes, a pioneer in this world movement, which is so impartial and which would bring such great results, has caused general sorrow. His personality was very well known in all America, and he has left in the Argentine Republic many friends who mourn his passing."

"We were all surprised," declares Captain Radler de Aquino, Chairman of the Brazilian Committee for The World Calendar, "to hear that Dr. Gajardo Reyes had passed away, in view of his untiring efforts on behalf of The World Calendar. I can only say it was a great privilege to serve with him in the great cause of calendar reform. In continuing our efforts towards the final goal Dr. Gajardo Reyes' work will always be before us, as an example and encouragement. The Brazilian Committee sincerely regrets to hear of his sad death and presents to you and to all our fellow members the expressions of our deepest sympathy and sorrow."

The Chairman of the Chilean Calendar Committee, Professor Alberto Cumming, says: "The death of a person so full of merits and virtues as Dr. Gajardo was has been a painful loss. He was an eminent scholar, full of great kindness and the spirit for work, and of an exemplary life. His death gave occasion to a keen manifestation of sorrow."

Writing from Turin, Italy, the Reverend Valentin Panzarasa, former President of the Chilean Calendar Committee, regrets "the death of such an important man for The World Calendar," and prays for the repose of the soul of Dr. Gajardo Reyes.

Dr. Eduardo Posada, Chairman of the Colombian Committee for The World Calendar, in regretting the death of Dr. Gajardo Reyes, writes: "For many years I have had a very friendly correspondence with this excellent gentleman, who was a great friend of Colombia."

M. Paul-Louis Hervier, Secretary of the French National Committee for Calendar Reform, writing from Paris, calls the work of Dr. Gajardo Reyes abundant and fruitful in many fields. He goes on to say: "For the benefit of calendar reform in Latin America, he was able to bring together competent forces, create good-will, interest the right people in it, and establish an amazingly efficient chain of understanding and work. When

the hour of the adoption of The World Calendar shall sound, it will be necessary to evoke the memory of Dr. Gajardo Reyes, who has been the best advocate of this useful reform."

The eminent Catholic authority on the calendar, the Abbé Chauve-Bertrand, states in a recent communication: "Dr. Gajardo Reyes accomplished much because his erudition was seconded by an activity that feared no obstacles. In Latin America, The World Calendar is inseparable from the name of Dr. Gajardo Reyes."

"It is with the most profound grief," declares Senor Don Luis Montero y Tirado, Chairman of the Peruvian Committee for The World Calendar, "that I have been informed by you of the passing away of Dr. Ismael Gajardo Reyes, who devoted most of his time and tireless energy to calendar reform. Although I did not know him personally I was able to appreciate him through the frequent correspondence we exchanged on matters of calendar reform, and I greatly admired his knowledge and enthusiasm."

Professor Alberto Reyes Thevenet, Chairman of the Uruguayan Committee, in regretting the loss of Dr. Gajardo Reyes, voices the desire to carry on the work for calendar reform and stands ready to continue to serve in the promotion of the ideas for which Dr. Gajardo Reyes stood.

Writing from Caracas, Venezuela, Senora Maria Luisa Escobar, former Chairman of the Venezuelan Calendar Committee, says: "I lament very much the loss of the eminent man of science, Dr. Ismael Gajardo Reyes, to whom The World Calendar owes so much because of the important work carried out in its behalf on the Latin-American continent."

"Dr. Gajardo Reyes' enthusiasm for calendar reform," states Miss Elisabeth Achelis, President of The World Calendar Association, "began in February, 1932. I well remember his first communication to us, voicing his wholehearted approval for The World Calendar and offering his support and service. With the stroke of his pen all sense of space and time was annihilated, for here we were working for the same cause in perfect understanding and cooperation, even though we were at opposite ends of the Western Hemisphere. It was a fine demonstration of the practical unity of nations and the brotherhood of man, expressing itself through this notable scientist, reformer, and friend, on a world-cause toward attaining a better world-calendar for all mankind to enjoy. We saluted Dr. Gajardo Reyes in life, and we honor him in death."

READY-REFERENCE CALENDAR

TO meet an ever-growing demand by readers for a ready-reference calendar card depicting both The World Calendar and the present Gregorian calendar for 1940, which would fit into a man's wallet or a woman's purse, a "Calendar Contrast" card has been developed. This card also gives briefly the story of the disadvantages of the Gregorian calendar and the comparative advantages of The World Calendar. Copies may be obtained by addressing requests to The World Calendar Association.

A CALENDAR FOR HOUSEKEEPERS

By CATHARINE JACKSON ALGER

NOT as an expert nor as a member of any unusual profession, but as one of innumerable housewives and mothers, I wish to make my lay comment on the proposed World Calendar. This calendar, with its orderly arrangement and predictable holidays, appeals to me as a piece of good housekeeping that the civilized world should carry out without further delay.

Even the worst housekeeper among us realizes the need of conserving time and energy, as well as money. If we sit around reading the newspaper instead of doing the dishes, if we spend time and cash at the movies rather than cooking a good warm and yet inexpensive supper, served at the moment the hungry hordes come in from play and work, we lose in the end. Planning ahead, and carrying out the plan in regular orderly fashion, following a definite routine, will always in the end give every one in the family more leisure and more fun.

Some of us instinctively realize the advantages of "having a place for everything, and everything in its place," but for the most of us, struggle, poverty, or deprivations, of one kind or another, are required to make us understand the power of long-term planning and of a regular march forward by means of the mapped routine. Children, even as much as adults (perhaps more sometimes), enjoy the rhythm in their lives that routine provides; and often ask for a regular series of jobs laid out and work to be accomplished rather than to be left at loose ends. Free play should, of course, enter their lives also, but within the area of long-term planning.

One of my children, for instance—and a very easy-going small boy too—asked us at one time whether we would prefer to climb a mountain or work at "being a workman." When we said that that was hard to answer as it all depended on the circumstances of the moment, he said, with youthful scorn, that it "was easy to answer." He went on to remark, "I would rather be a workman and work hard and earn money than to climb a mountain for nothing and just have fleas and flies coming up round me."

To be sure, this may not show an adventurous spirit, but there is a good deal to be said for a working plan rather than wandering along with the casual fleas and flies that one meets when no plan has been instituted.

The main point of this preamble, however, is to indicate that in a household a person at the head may go on easily and luxuriously with little planning and order, as long as time and money prevail. But, when either is more lacking, then a planned routine must enter the picture.

When we possess many material assets and feel secure that we shall have those for years to come, we do not feel the urge to conserve what we

have now, nor to prepare and plan with exactitude quite so carefully for the future. But when we have a scarcity of the assets or foresee an emergency when scarcity may occur, we then are particularly careful in planning ahead. In concrete family terms, we make over the clothes we have rather than buying new ones, we repair our automobile and do not turn it in for a more up-to-date contraption, we look far ahead to the family vacation so that we can all be together for one family jaunt rather than the coming and going of easier years, and we find it more important than in those years of greater ease and security that we should be enabled to make plans ahead successfully.

This brings me to the thesis uppermost in my mind as a housewife planning for the family year of holiday and school work. With the proposed World Calendar we could arrange family holidays together, as now we are not often able to do; we could plan ahead both our personal and group activities more clearly than now. How astonishing it seems that now we should positively require the aid of a calendar to make any engagements more than a week ahead. No one can make a business or personal date for the 17th of next month until she finds out whether that is Sunday or Monday. We are so used to this waste of time and words that we do not appreciate the easy simplicity of knowing, for instance, that the 17th of a particular month is always a fixed day of the week; such as January 17 which always falls on a Tuesday, the same day as it will in the other first months of every quarter. The mother of a family particularly should appreciate the new calendar, with all her problems of school days, business engagements, neighborhood clubs, children's parties, and conflicting holidays to plan for.

Just as a crisis in the family often provokes more careful planning ahead, as a housewife, I believe that also during a crisis in the world better planning should take place in all lines of endeavor. In time of plenty we trouble ourselves very little about any changes that do not seem to affect us at the moment with too much discomfort, but in time of struggle we are more inclined to look ahead toward betterment, and to work to that end.

It would seem, therefore, that *NOW is the time to push the change toward the proposed World Calendar*. As my father, Dr. Dugald C. Jackson*, an engineering educator, said to me recently, "The disturbed situation in the world is just the time to strongly agitate for the adoption of the new calendar." Furthermore, it is apparent that the time and worry we would save would contribute at least a little to the great need of our world for saving wasted energy!

History has shown that many improvements in the technique of civilized daily life have made even more rapid progress in a time of conflict than

*EDITOR'S NOTE: Dr. Dugald C. Jackson, former head of the Department of Electrical Engineering, Massachusetts Institute of Technology, was President of the American Academy of Arts and Sciences, in 1938 and 1939.

during a more peaceful period. In the matter of calendar improvement, for instance, the work in Spain for this reform went steadily forward even during the darkest days of the civil war in that country, until the Spanish Government officially approved The World Calendar. This is also true of China, where, in spite of the unceasing warfare and its attendant ills, a calendar reform survey was undertaken with the result that China is now one of the 14 nations to approve the new calendar.

Since Daylight Saving Time, which is even more popular in England and France than in this country, was put into effect during the last world war, it is obvious that we do not need to wait until peace is restored before we adopt a plan like the new World Calendar. Most certainly the head of a household does not wait until he has a better or more honest city government before he paints his house; nor, furthermore, when snow and wind rage without, does his wife refrain from making useful improvements indoors until that time may come when once more the storm has abated, and the family can peacefully plan larger improvements in their establishment. This is also true of an improvement such as The World Calendar.

The other day, when speaking of this needed change in the calendar, I remarked to a professorial friend of mine that I had heard objections to the change on the score of preference for the variety and unexpectedness of holidays and dates as they now are. My friend, the professor, said in his dry way, "A toothache is unexpected, but who wants it?"

It seems to me then, that not only is the present calendar a "pain in the neck" in modern language, but also as my friend suggested, "a toothache." Let's have the tooth out!

OBITUARY NOTES

MONSEÑOR DR. BELISARIO A. PHILIPPS, Archdeacon of the Cathedral of Lima, Peru, Councilor of the Comité Peruano del Calendario Mundial, died late in February in Lima. An active leader for calendar reform in Peru, he was instrumental in gaining his country's approval of The World Calendar. In announcing his death, Señor Don Luis Montero y Tirado, Chairman of the Comité, said, "He was a most capable man and very enthusiastic about the reform of the calendar. This is a great loss to us."

DR. JOHN HENRY TANNER, Professor Emeritus at Cornell University, died in Ithaca on March 11, at the age of 79. A hearty believer in The World Calendar, he was one of our earliest members, his membership dating from August 9, 1931.

THE RIGHT REVEREND GEORGE CRAIG STEWART, Bishop of the Protestant Episcopal Diocese of Chicago, died suddenly on May 2. He has been a member of The World Calendar Association for six years, and aided in securing the approval of The World Calendar by the Episcopal Church.

Other deaths among the membership of The World Calendar Association include Mr. I. I. Cammack, Superintendent Emeritus of public schools of Kansas City; Mr. Charles Israel, insurance executive of Cincinnati.

THE SOVIET CALENDAR

By DR. ALBERT PARRY

Author of *Whistler's Father* (Bobbs-Merrill, 1939)

IT IS generally known that the Soviet calendar is quite different from the old Tsarist and Kerensky ways of counting time, and that, in some vague and curious manner, it is a far cry from our Western calendar. A common error is, however, to suppose that the great change came immediately upon the Revolution of 1917-18. Actually, the main shifts did not arrive until 1929. It is true that the first—but not chief—reform was effected on January 26, 1918, when Lenin as chairman of the Council of People's Commissars signed a decree which cut 13 days from the Russian calendar, thus substituting the Gregorian system for the Julian. It is also true that in 1919-20, in an attempt to conserve fuel, an extraordinary ambitious daylight-saving method was tried out, with the result that Government employees had to come to their offices as early as five or six o'clock on summer mornings. Yet, outside of these two, no experiments with regard to time and its reckonings were Russia's plague or profit until 1929.

Beginning with October 1, 1929, Saturday and Sunday were legislated out of existence in the Soviet Union, the 5-day week taking the place of the old 7-day one. The new decree of the People's Commissars stated that the year, as before, would consist of 12 Western months, but that, instead of the previous system of four-odd weeks, each month would have six weeks. Each week was to have four working days, the fifth to be the Free Day. The extra five days of the year, known to the outside world as the 31st of certain months, would in due time be proclaimed national Soviet holidays. A few industries would have 6-day weeks, each consisting of five days of labor and one day of rest. While the majority of the Soviet people, employed on a 5-day week basis, would have a 7-hour working day (that is, each of the four working days of their week), the 6-day week men and women would work six hours a day (that is, each of the five working days of their week), so as not to be overworked by missing an extra day of rest a month. Annually, each worker was to have 72 days of rest, each day of 39 hours and five national holidays. Each worker was also to have an annual vacation from a fortnight to a month in length, depending on the importance or difficulty of the job.

Russians, both at home and abroad, were tremendously intrigued by the sweeping change. Reactions differed, of course. A newspaper of Russian émigrés in Riga, Latvia, printed a cartoon showing a Soviet soldier shooting to cruel death two young ladies placed against a wall and

blindfolded with bandages lettered "Saturday" and "Sunday," the cartoonist's caption reading: "For their bourgeois origin." Soviet newspapers carried cartoons, which lacked suggestions of bloodshed, but nevertheless agreed with the Riga idea that the Soviet week was being purged of its non-working elements. One cartoon, entitled "Six Will Not Wait for One," depicted six working days of the old week as men and women in laborers' garb pushing Sunday—a well-dressed but distressed gentleman—toward a factory entrance, the accompanying remark being: "Enough loafing from you!" Another Soviet cartoon, titled "The Purge of the Calendar," showed a stalwart worker beating the stuffings out of a calendar hanging from a clothes line. The figures and symbols scattering from the insides of the calendar to the ground were Sundays, various religious holidays of Christians, Jews and Moslems, and even the days of plain drunkenness on the part of un-class-conscious workers. Observers in the West, too, noticed the change and its seriousness. After the new calendar functioned for a year, *The World Tomorrow* of New York wrote in its October, 1930, issue: "The new Russian calendar is not merely a revolutionary gesture. It is a social experiment of supreme importance and it must be kept in mind when reading the news from Russia. Unobtrusive and seemingly unimportant on the surface, it carries within itself possibilities that are likely to be sensational."

Among the most sensational possibilities offered by the new calendar was the so-called *nepreryvka*, or the uninterrupted week, with its main feature—the staggered Free Day. A person working under the new system had a day off every fifth day, the result being that every day 20 per cent of a great mass of the population of the U. S. S. R. were at rest while the other 80 per cent worked. There were no common holidays for the country, except on the few annual occasions of national celebration. To simplify the somewhat complex situation, colored slips were issued to the populace, marking each man's and woman's day off. Corresponding to the five days of the newly established week, there were five colors: yellow, pink, red, purple, and green. The idea was that Soviet citizens would learn the colors of their friends and kin and so know who rested on what days—should there be any desire for visiting and joint celebration. Managements of the various State trusts announced that they would accept and consider applications from their employees who wished for the same Free Day. "Failing that," an American wisecracked in Moscow in November, 1930, "if one's color is purple, for example, one picks one's friends among the purple." He also suggested that Russians have their visiting cards printed in the colors of their Free-Day slips.

Weighty reasons were advanced in Soviet books and journals for the introduction of the uninterrupted week with its staggered Free Day. The main explanation was, in effect: "We in the Soviet Union have compara-

tively little machinery and yet such a large program to carry out. We cannot allow this valuable machinery and other equipment to stand idle even a few days in the month. We must use it all the time." The slogan therefore was: Use buildings and machinery 365 days a year, 24 hours each day, instead of the old basis of 299 days with seven or eight hours of work each day. The fuller the working year, the quicker you train the sorely needed artisans, mechanics, engineers and other experts, the fuller and quicker your progress. Socialist industrialization of vast Russia was, in brief, the chief reason for the new calendar. Joseph Stalin declared: "Given right organization of labor, given set responsibility of each person for a definite task, given firm detailing of certain groups of workers to certain machinery, given efficient organization of shifts equal to one another in their training and ability—given all these conditions, the uninterrupted week will lead to a great spurt in production and to an improvement in its quality, doing away with lack of personal interest in the work." Stalin said that, divorced from these necessary conditions, the new calendar led to indifference and irresponsibility, to careless handling of costly machinery, so that in many cases "lack of personal interest in the work entered the establishments as an unlawful companion of the uninterrupted week."

Cases of indifference and carelessness, if not of chaos, continued to be too numerous even after two years of the new calendar. The exhortations and punishments did not seem to improve the situation. Plainly, the uninterrupted week as introduced in 1929 did not work. The chief trouble appeared to be in the staggered Free Day, and most objections on this score came from the families rather than from any other organized groups. Wives and husbands, parents and children complained that each working member of the family seemed to have a Free Day different from that of all other members, and that in applying for a common day of rest there was too much red tape to overcome. Too, the 5-day week, with its four days of work and one day of rest, seemed too short and tense. Skilled mechanics said that machinery also needed rest and overhauling every once in a while, and that the staggered Free Day, with its continuous use of the equipment, gave no chance for such repairs. It was true that, prepared by years of anti-religious propaganda, the urban populace did not mind the abolition of Sunday as a holiday, religious or otherwise; and there were other features of the new calendar which met with general approval, but the shortness of the week and the staggered Free Day had to be adjusted.

And so a new reform came, this time to last not for two or three brief years but well into the present.

The newest Soviet calendar, instituted in 1932 and still in use at this writing, divides the year into 12 months as in the West, but the month has

five weeks of six days each. The days of the week have no names but numbers alone: the first day, the second day, the third day, and so on. The first days of the five weeks are the 1st of the month, the 7th, the 13th, the 19th and the 25th. The Free Day falls upon the 6th, 12th, 18th, 24th and 30th of each month. At least once there was a decree transferring the Free Day from the 30th of December to the 1st of January; it is difficult to say at this time whether this way of making a holiday of the New Year's Day is a permanent or temporary practice.

Whenever a month has 31 days, the extra day is a day off in some industries, but a working day in some others, with extra pay. Even this day off is not exactly an idle one. In some schools and factories it is devoted to military exercises, in others to instructive games. An American friend of mine, who studied law in a Moscow school, tells me that he and his Russian fellow-students always liked the 31st of the month because on that day they had make-believe trials to test their knowledge of Soviet laws. In February the week is either carried from the 24th of the month to the 6th of March or is made into an extra-short one by virtue of a holiday proclaimed for March 1. In either case the Soviet worker, employee or student loses or gains nothing, his loss or gain nullified by special arrangements calling for extra rest or extra work at other times.

With the names of the week's days gone from common usage, the Russians say, "I'll meet you on the 17th," instead of "I'll meet you on Tuesday." Americans living and working in Russia are in the habit of saying, "Meet you on Soviet Monday," meaning the day after the Free Day, which in Western countries may happen to be not Monday but any other day of the seven-day non-Soviet week.

The outstanding advantage of the calendar in use in the present-day Russia, as compared with the system prevailing between 1929 and 1932, is that the Free Day is not staggered, and families and friends are no longer inconvenienced. The Free Day, by and large, is the same for all. Some war-supply industries, also all the public services, such as telegraph, telephone, railroads, hospitals, power-houses, gas-works, water-supply and similar systems, continue to use the uninterrupted week, with the result that certain employees still have a staggered Free Day, but this is not a peculiar Russian trait—in the West, too, war-industries and public services operate on the basis of an uninterrupted week and staggered day of rest. A typical Soviet feature is, however, the fact that all the big stores in Russian cities are open on the Free Day, to give the populace a chance to shop around, but are closed on the day after the Free Day. (In the West, there is a striking parallel in the city of Paris where all the museums are kept open on Sunday and closed on Monday.)

The 5-day week, consisting of four days of work and one staggered Free Day, as introduced in 1929 and discarded in 1932, is still preserved

in a limited number of industries, where it is claimed to have proved its worth. Chemical and ore-smelting industries predominate in this category. The staggered Free Day has won out here mainly because the nature of the technological process demands continuous use of crucibles, smelters, furnaces, or what have you. Working shifts in such industries are scheduled in a way that guarantees the employees the same number of hours of work and rest as those prevailing in the industries of similar categories operating on the post-1932 6-day week (that is, a week consisting of five working days and one Free Day). Generally speaking, the Soviet working day is eight hours in the construction trades, also in road- and canal-building; seven hours in most other industries and offices; and six hours in occupations considered detrimental to health. Hours of work per 30-day month thus amount to 200, 175 and 150 for the three chief categories respectively. Because of the present war situation, the official Soviet prohibition of overtime work is allowed to be a dead law; in many cases, work is done not only on a weekday after the hours, but also on a Free Day. Such work is usually called not "overtime" but "special task."

There are very few general holidays set by Soviet law for the nation as a whole. January 22 is observed as a non-working day of mourning—the Soviet people dislike some foreigners' habit of calling it a holiday; it is in commemoration of the Bloody Sunday in January, 1905, when the Tsar's police and troops killed hundreds of workers marching toward a palace with a humble petition, as well as of the January day in 1924 when Lenin died. May 1 is, of course, an international workers' holiday, first conceived in America in the 1880's and now most zealously observed in the Soviet Union. November 7 and 8 are celebrated as the anniversary of the Bolshevik Revolution in 1917. The 1929 idea of some day creating special national and revolutionary holidays for the five days in the year that happen to be the 31st of the month has since been abandoned.

With the Free Day becoming largely the same for the urban population of the Soviet Union, the 1929 scheme of colored slips has also been given up. Its disappearance is so complete that an American who lived in Russia for three years in the middle 1930's, and was quite close to the Russians in their every-day life in homes and offices, evinced surprise when I asked him about the slip-system. He had never heard of it!

Equally forgotten is the proposal, briefly entertained in 1929-30, to invent new names of appropriate revolutionary sound for the days of the week. For a time it had seemed that at least one day would be named Lenin-den, that is, Lenin-day, but even that suggestion did not seem to take. And so there are no new names for the week's days in this year of 1940, while the old names for the days of the week, although not forgotten, are seldom used. You will see the old weekday names printed on newspaper mastheads, but in daily life, particularly in cities, they are mentioned so

infrequently that yet another American acquaintance of mine, an economist who spent years in Soviet Russia, and knows the language very well indeed, tells me that he did not bother to learn the Russian names of the days until he returned to the United States. "But why are they still used on the newspaper mastheads?" I asked the first American, the man with the record of three years' residence in Moscow. "I don't know," he laughed. "Maybe because somebody forgot to issue a special decree telling the editors to discontinue the practice." Seriously speaking, however, we agreed that it must have been because the old 7-day week is still used in the country districts, and the farmers know and follow the old names of the days.

It has been said that Soviet children do not at all know the names of the week's days. This is an exaggeration, to be sure. If anything, children and others have a sort of academic knowledge of it, since so much pre-revolutionary classic literature is reprinted by the Soviet publishing houses, to be used extensively in Soviet schools and homes, and Russia's old classics certainly contain frequent mention of old names of the week's days.

A commentary on the stubbornness of the Russian farm-folk, and the difficulty which the Kremlin has had in its constant endeavor to revolutionize village life, is in the fact that the old 7-day week has persisted in the countryside after all these years of the Soviet regime. Even the word, "Sunday," which in Russian also means "Resurrection" (*voskresenie*), has survived—not only in home-use but also in official documents. Thus, the Soviet election laws provide that for national voting a day should be set aside which combines the Free Day in the cities with a non-working day in the country, and the official explanation of the laws adds that by "non-working day" the Soviet Government means Sunday. In Moslem regions, such as Azerbaïdzhân, Uzbekistan, and Tadzhikistan, the Soviet election law mentions Friday as the day of voting—Friday, which, is, of course, the old weekly holiday of religious Moslems.

Not that the Soviets did not try their best to eliminate the religious holiday as the day of rest. But when in 1929 and again in 1932 the Soviet authorities tried to institute the 5- and later 6-day week for the farming districts as well as the cities, the peasants blandly sabotaged the reform by taking off not only the Free Day each five or six days but also the good old Sunday every seven days. The resulting confusion and loss of valuable working time proved to be too much, and the peasants won out by regaining their traditional 7-day week, Sunday and all. One of my American friends of Soviet experience tells me that he was always reminded of a certain evening being Saturday evening if he happened to be traveling in the country: the roads, he relates, were full of peasant carts going to the nearest market-towns for the traditional Sunday of buying and selling.

Summing up, we see that the main calendar in today's Russia provides for a 6-day week, but that there are also two other systems in use—the old 7-day week and the 1929-32, 5-day week. Soviet officials, newspapermen and others whose work necessitates constant awareness of all three systems may not find the going too smooth, but to outsiders they extend calm assurances that the thing is simplicity itself, and that there is no confusion. A certain difficulty is admitted by those officials and other

citizens who have to deal either with foreign relations of the Soviet Union or historical research of their country. These men and women have to keep on their desks several calendars at once. But even these insist that no further change or simplification, tending toward the Westernization of the calendar, is necessary.

There is, of course, the fact that former Commissar for Foreign Affairs, Maxim Litvinoff, acted as *rapporteur* for the Transit Commission of the League of Nations in presenting that Commission's recommendations for calendar reform to the League Council in January, 1937. But the Soviet Russians insist that it was a purely mechanical occurrence, that it did not signify Moscow's advocacy of The World Calendar, that at best it may have represented Litvinoff's personal preference for the new idea from the West. And with Litvinoff's resignation from his post, many of his ideas of rapprochement with the West have been shelved for the time being at least.

The present Russian feeling of distrust of everything foreign and fear of the hostile West is not bound to last, we hope. In the past, each period of such distrust and separation was followed by an era of better feeling and cooperation. And each time Russia opens herself to the West the difference of calendars becomes irksome. It was to bring Russia closer to the West that Lenin in 1918 changed her calendar from the Julian to the Gregorian. A similar shift closer to the West and its up-to-date reform of the calendar is inevitable once more, when Russia again decides that her fear of the West was somewhat superfluous.

METHODIST CONSIDERATION

By THE REVEREND W. A. STANBURY

THE following resolution was presented to the General Conference of the Methodist Church at Atlantic City. It bore the signatures of some 20 or more delegates from various sections of the country.

Whereas the annually shifting date for Easter causes unnecessary work for clergy and inconvenience for laity; and

Whereas a stabilized date for this important Christian festival would be a real contribution to Church unity; and

Whereas the College of Bishops of the Methodist Episcopal Church, South, in session on January 8, 1935, went on record as favoring the second Sunday in April as the fixed date for Easter; and

Whereas the Universal Christian Council for Life and Work at its Council Meeting at Chamby, August 21-26, 1936, declared that studies and reports received from the Churches have shown that the stabilization of Easter would, if carried through, receive the support of the overwhelming majority of the Churches;

Therefore, be it resolved, that the General Conference of the Methodist Church favors the second Sunday in April as the fixed date for Easter.

NATHAN NEWBY, *Chairman*;

ERNEST W. PETERSON, *Secretary*.

It was adopted by the Committee on Membership, Lay Activities, and Temporal Economy on May 3, 1940, and was referred by the General Conference to the Committee on Interdenominational Relations, a standing committee of the General Conference which will report to the session of 1944.

FAMILY OF TIME

By ELISABETH ACHELIS

President, The World Calendar Association

Text of a broadcast over Station WNYC, from the Town Hall Club, April 11, 1939

IN THE Declaration of Independence we are told that the pursuit of happiness is the inalienable right of man. What an amazing affirmative! And don't we experience a deep inner thrill at these words, that this goal of happiness may be yours and mine? And happiness means service, a giving and a sharing. For if we attempt to hold it to ourselves, we lose it. But there is another necessary quality to happiness which I do not think is sufficiently realized. It is *order*. And it is *order* that is fundamental in the new World Calendar and so will yield its share of happiness.

One of our foremost scientists and a Nobel prize winner, Dr. Robert A. Millikan, writing about our universe, tells us of the "extraordinary and unexpected orderliness and of the wondrous beauty and harmony that go with order" and that within this vast universe there exists "an inter-relatedness, a unity and a oneness about the whole of nature." I think it is just this *order* of the universe and solar system that reveals the manner in which we should improve and perfect conditions. In the degree that we replace disorder with order and confusion with harmony we shall find ourselves in the same degree unhappy or happy. Order and happiness go hand in hand, and this is also true of the calendar.

At these Round Table Luncheons, where every Tuesday we come together to discuss vital, up-to-date subjects, we sometimes meet on four Tuesdays in a month and then again on five; we never know. Last November (1938), you may recall, there were five Tuesdays, the Christmas month had only four, while January had five Tuesdays, once more. But February, March and April, all in a row, had but four, while May, the closing month for our pleasurable luncheons, will have again five Tuesdays. Do you think this whimsical irregularity and disorder tends to make planning of programs a happy job for our chairman, or the balancing of the monthly budget easy? I think you will agree it does not. If we have a calendar wherein there is *order*, in which the first month in every quarter has five Tuesdays and the others four, inconvenience of planning and difficulty of adjustment would disappear. And of course every year would be constant and comparable. In the new World Calendar of 12 months and equal quarters, upon which we are discoursing today, order makes all things easy. And here we should not fall into the error of thinking that order means monotony. It does not. Order is a harmonious arrangement whereby all

the various parts in any system operate together without friction. Order is not a strict regimentation, for only in order does a magnificent freedom exist.

There is one field of activity that appreciates this fine sense of order and that is the radio. Were it not for this, radio programs could not run so smoothly and easily as they do. And, then, think of the variety of programs that we can listen to because of this order. We are becoming an orderly people in our sense of clock-time. This was notably apparent last September (1938), the time of the Munich Conference, when the entire world stood by as one audience through the power and influence of the radio. Had world-wide Standard Time not been adopted in 1884, whereby the world became united under one common and orderly system of clock-time, such ease in assembling an audience at an appointed hour for radio communication would have been impossible. Standard Time proved the forerunner of today's convenient time-keeping in regard to days, hours, minutes, and seconds. And what has been done for clock-time, we are now proposing to do for calendar-time.

We have only to study the marvelous solar system in the universe, wherein nine planets move in their particular orbit around the Sun in perfect equanimity and accord, where all are different yet all unite in forming a happy system of oneness. Each planet respects its own right, its own freedom, within its own path. Each is lord and master in its own orbit. Yet they all influence each other and unite in forming one happy solar system—a system, the most harmonious and stable known to us here on earth.

But alas, our present calendar does not possess these qualities. The days shift in the calendar in a most confusing way; the week constantly breaks awkwardly into the months; months are hopeless in their irregularities and the quarters are flagrantly unequal in length. No order exists in the calendar of today—it is wayward, irregular and difficult. I think, then, you will agree that a new and improved calendar must have law and order as its keynote, if it is to emulate the solar system. By this I mean the calendar must keep in step with the Sun, which gives us our four seasons.

Fortunately, for us, past reformers of the calendar have worked so well in establishing this conformity with the seasons, that our calendar today works in happy partnership with nature's law. Our four-seasonal 12-month year calls for no astronomical adjustment nor is any proposed in *The World Calendar*. The need for improvement is essentially social, civil and economic. It has to do with our every-day living—in our homes, in our offices, in our professions. The arrangement *within* the calendar-year calls for improvement.

In the business world, quite frequently, pay envelopes or salaries,

instead of being paid monthly, as are bills, are paid semi-monthly on the 15th and the last day of the month. It is very simple to plan your budget for the first 15 days, but what about the remaining 15 days? There is February. That is easy. For there are only 13 days left in the second half of the month so that you have a nice bonus by which you can give yourself a little bit of leeway in your expenditures. In the four months, April, June, September and November, wherein you have 30 days, your pay envelope will be as good for the last 15 days as it was for the first. There is no difference. But, when it comes to the longer months, January, March, May, July, August, October and December, seven months not coming at regular intervals either, you have to stretch your purse and plan more carefully your expenditures in the last half of these seven months because of the one extra day.

And should you be given your pay envelope at the end of every week, as many are, you are equally discomforted as the weeks begin and end the months in a most haphazard manner. And even quarterly-year payments do not help you, because these are sometimes short and sometimes long. Now all this disorder, irregularity and inequality cause more unease and unhappiness than we are conscious of. We might well quote Anna Hempstead Branch: "Order is a lovely thing; on disarray it lays its wing, teaching simplicity to sing."

We have just celebrated a joyous Easter (April 9, 1939) and some of us still have our children home from school and college. How has this vacation affected your family? Let me cite what happened in mine. One nephew came home the 10th of March to return the 30th; another nephew, the 29th of March to return the 13th of April, whereas my niece arrived home March 22, also to return on the 13th, so that only two could enjoy Easter at home. Public and high schools in New York City began their Easter vacations with Good Friday, April 7, and end their vacation on April 17, a week from Easter Monday. What a hodge-podge of vacations! Is it surprising that families despair when vacation days arrive?*

Two holidays regulate vacations. The first is Labor Day. As to its observance on the first Monday in September, vacations come early or late, and schools and colleges open and close their educational year early or late. The other is the great variety of days on which Easter meanders within a period of 35 days—longer than one month. Easter is the great migrant of feast-days.

The stabilization of Easter, then, on a definite date would be a desirable feature in our civil calendar but, being strictly religious, this rests entirely with religious authorities. Many churches have already spoken in favor of a fixed Easter date in a new and perpetual calendar, but obviously, a fixed

*EDITOR'S NOTE: This year the early Easter—March 24—caused even greater inconvenience and confusion.

Easter would be impossible within our changeable calendar of today. Only in a new perpetual calendar, such as The World Calendar, can Easter be fixed on its day and date. It is agreed among churches that no dogmatic difficulty exists in bringing about stability in our confused Easter.

Now we women just love our anniversaries, be it our wedding anniversaries or our husbands' and children's birth-dates. Your boy or girl born on Tuesday, April 11 (let us say), can never know the weekday unless you, mothers, tell them. And how many mothers know?

How many here know the weekday on which they were born? There will be some of you who will say: "What does it matter whether I know the actual weekday or not? It is fun to celebrate birthdays on different days of the week; or, perhaps, forget them all together." That may be true, but can we ever be accurate in observing our birthdays or wedding anniversaries? Strange, is it not, that in our concern to observe the date, month and year we should be so neglectful in remembering the day of the week. As a matter of fact your *birthday* really is denied you, for you can actually possess only a *birth-date* under the present calendar. And so the weekday has ever been the Cinderella in recording events!

When in 321 A.D. Constantine the Great introduced the seven-day week into our civil calendar, he never realized that with the adoption of the week, the calendar would lose its previous stability and order. For 52 weeks of seven days are always short one day in our 365-day year. To keep our calendar accurate with the cycle of seasons, one day must always be borrowed from the following week at the close of every year. It is this borrowed day that is constantly throwing the calendar out of its smoothly running gear. And chronic borrowing always does that. Shakespeare tells us: "neither a lender nor a borrower be." And this is not only true in life, but in the recording of life as well.

Whenever we celebrate our great Independence Day, founded on the inalienable right to the pursuit of happiness, we can only record the date, month, and year. Why should the day of the week have been so excluded, and be the forgotten time-unit in all our anniversaries? In this new World Calendar, anniversaries of whatever kind can be easily recorded and remembered in their four-fold aspect—the day, month, date and year.

But you will naturally ask how can these benefits be achieved—in our business world, school vacations, anniversaries, and many others too numerous to mention in my allotted time? And will it not cause a great deal of confusion when the change is made from the old to the new calendar? Not at all. It is most easy. Whenever a New Year's Eve or a New Year's Day falls on a *Sunday* in the old calendar we can slip quietly into the new calendar without any fuss. The necessary changes lie only within six months—six months between February 28 and September 1. The rest of the year would be exactly the same as in the calendar we now use.

As for the changes, they consist in adding or dropping a day or two at the end of certain months. Should your birthday be March 31, since The World Calendar gives 30 days to March, it would be celebrated either March 30 or April 1. It is an interesting fact that as early as 1236, King Henry III of England decreed a law at Westminster that reads: "the day increasing in the leap year shall be taken and reckoned on the same month wherein it groweth, and that day, and the day next going before shall be accounted for one day." Quaint language. King Henry meant that one born on leap-year day should have a legal birthday on February 28, in all except leap years. I might suggest that all those born March 31, May 31 and August 31—the changed days necessary to make the equable adjustment—can observe their birthdays as suggested by the English King, on the day previous, namely the 30th day of the month. Then they will have the added satisfaction in knowing that they are contributing to law and order.

A plan of the new World Calendar of 12 months which lieth so solidly on-the-square, wherein each quarter is like all the other quarters, is before you. Each quarter consists of one long month followed by two shorter ones; the long month has 31 days, the two short months 30 days each. This gives 91 days to each quarter, all quarters being equal. Then every quarter contains 13 weeks or three months, and every month has 26 *weekdays* besides the Sundays. Each quarter begins with a Sunday and ends on a Saturday. Here we have perfect order without sacrificing that pleasing variety within each quarter—a variety which gives life and zest to the calendar.

Now you will rightly tell me that this only totals 364 days. The indispensable 365th day, necessary to keep the year astronomically correct, is called Year-End Day. It is placed, as the name implies, after the last day of December, which in The World Calendar is December 30. It can be called either December 31 or December Y, and is reckoned as a second or twin Saturday. This should not seem incongruous, having two Saturdays in succession, since all travelers who cross the International Date-Line experience just this; they must repeat one whole day when they cross this magical line in an easterly direction. The *gift* of a Year-End Day is recommended as a world-holiday, dedicated to the peace and amity of nations.

As for leap year, it follows a similar plan, by placing the Leap-Year Day in the middle of the year. This day comes after the completed sixth month, and is tabulated June 31 or June L. Like Year-End Day it, too, is a second or double Saturday, and another world-holiday. Thus order, balance and equality are accomplished.

That is all there is to the new calendar. We get so much for so little change. It is balanced and simple. And to illustrate what order and harmony will do to our time-system, you will note that all the various time-units—the day, week, month, season or quarter—these four, all come together to round out the quarter-year on one and the same day. No difficult figuring is needed to effect this.

We can well imagine Father Time's joy in welcoming his newly found happy family, wherein all previous friction has been removed. His day-child, instead of running riotously among the months, has found its rightful place. It knows at long last where it belongs, with all its futile wanderings ended. The week has been cured of its borrowing habit and is happy in its ordered location. It has found its freedom within this orderly arrangement, happy that at the conclusion of every 13th week it

can join in reunion with the rest of its family of Time. The week no longer disturbs the equanimity and order of the calendar. The mature month, too, has become firmly established having regularly 26 weekdays coming on the same dates. The indignity of being associated with a nursery rhyme has been eliminated. And the seasonal quarters complete this happy family of Time. With the joining of four such units, the calendar is now a joyous community, wherein dwell order, stability, harmony and equality without end. It now parallels the solar system.

But what of its adoption? Fourteen governments have officially approved it, and were the United States to sanction it there is no doubt but that we all would be using it in a very short time. To voice your opinion then, and herein I speak also to my invisible audience, to work within your clubs and organizations, so that they, too, will officially approve this calendar, is the strongest way to show our Government that we the people really want an ordered calendar of time.

Its operation could be made effective on New Year's Eve, December 31, 1944, a Sunday. Considering this day as the new Year-End Day on an extra Saturday, The World Calendar would begin with Sunday, January 1, 1945. The following day, Monday, January 2, would then start the working week; as it would no longer be necessary to observe Monday as a holiday, because the Year-End Day just before the Sunday is a world-holiday. Every new year would begin with Sunday, January 1, and every old year would end with the Year-End Day on a double or twin Saturday. To accomplish this it is essential that two years before or possibly one, by 1942 or 1943, international sanction must be gained for making it operative at the end of 1944. There is, therefore, no time to be lost. Otherwise the next opportunity does not occur until January 1, 1950, and who would wish to delay this ordered calendar six more years?

It has been said that other vital needs exist more important than that of an ordered calendar. But I ask you: "How can we progress if we will not even improve our time-system which influences every phase of our life?" How absurd to think that our 2000-year-old calendar is adequate for our day and age! We gave up candlelight when electricity was offered; we gave up sailing vessels, clippers and buggies when super-steamers, streamlined trains, automobiles and airplanes came into use. Let us then give up our obsolete calendar and adopt the best we know, The World Calendar, for the recording, measuring and use of our time.

This movement should be easily adopted by international agreement as it lies beyond the interests of any one nation or race. It does not call for concessions by any one country at the expense of any other. This is because time, being universal, belongs to all alike. Here at least, in these troubled times, is a safe, equable movement in which every nation can unite. International agreement on a revised calendar would prove, even to the doubters, that nations *can* agree and cooperate. And who knows but that the nations themselves, when they find they have agreed on this, may not see the wisdom in agreeing on other measures as well. If we all do our part a new World Calendar is a definite step toward world-wide harmony and understanding.

TIME MARCHES ON

By GEORGE KENT

(From *The Family Circle*, December 30, 1938)

SOME day now, the world may have a new calendar. The one tacked on the wall may be good enough for some of us, but there are men and women who believe the world could be made a better place to live in, if the calendar were revised. And now there is some possibility that they are going to have their way.

If the change goes through, it will be the first alteration of the Western calendar in 357 years. The present one has outlived a hundred wars and all the great scientific and political revolutions. Time has marched on, but the calendar which records it has stood still.

We may take this checkerboard of days for granted, but we are all affected by it, because dates are intimate things—in more ways than one. Our birthday, our graduation day, our marriage day—these are signalized by marks on the calendar. All our sentimental anniversaries are there, and so, too, are the dates of our triumphs, our defeats, and our death. The story of the nation is a tale told by a calendar. Although our present calendar has gone unchanged for a good many years, its early history was one of constant evolution and amendment. In the old Roman calendars, for example, March used to be the first month of the year and February was the last, which explains how it happened to become the short, stepchild month. Julius Caesar rearranged the length of the months in a new calendar, which for a time was a phenomenon of accuracy.

Caesar made one small mistake, however, but considering that he made it about 2,000 years ago, it is surprising only that he didn't make more. He figured that it takes the earth 365 days and 6 hours to go around the sun, and on that calculation he based his year. The true solar year contains 365 days, 5 hours, 48 minutes, 46 seconds. The Julian calendar was off by only 11 minutes, 14 seconds, which isn't much when spread out over a year. But the error added up, and at the end of 1,000 years, these annual shortages of minutes totaled about seven days, and at the end of 1,500 years, about 10 days.

Now 10 days is time in any man's year. A calendar must work with the sun or it is no good; it must do it so accurately that June 21 will actually come out the longest day, and December 21 the shortest. Otherwise, the equinoxes don't jibe with the dates, and the seasons come along in the wrong months. And so the Julian calendar was like a clock which was running slow, and if it had been permitted to go on without adjustment, winter eventually would have retrograded to July, and so on.

In 1577, Pope Gregory XIII decided to do something about it. He sat down with the scholars, and after five years of labor produced the chart of days, weeks, and months which we use today. It operates with an annual error of only 26 seconds, which will add up to a full day only after some 3300 years have elapsed. He put it into effect by the simple process of skipping the 10 days; in other words, he turned the clock forward, and then it

Tab[eclipsis] laminar[um] et primo de sole								
num[er]o anno[rum]	nomina mensiu[m]	die[s]	digit[us]	seria	hore	minut[us]	finis eclipsis	
							hore	minu[tus]
1493	octob	10	9	5	0	0	1	20
1502	septēb	30	8	6	17	28	19	12
1506	Julii	20	3	2	1	49	3	3
1513	martii	7	4	1	23	49	1	9
1518	Junii	7	10	2	18	22	19	17
1524	Januar	23	9	2	3	12	4	6

Tabla de eclipsib[us] lune								
1494	septēb	14	17	1	17	5	2	33
1497	Januar	18	17	4	3	50	7	18
1500	novēb	5	13	5	10	17	13	30
1501	mai	2	19	1	15	33	19	6
1502	octob	15	14	7	10	15	12	9
1504	februā	20	16	5	10	47	14	13
1505	aug[us]	14	15	5	5	42	9	6

A page from Zacuta's Perpetual Almanac, the same edition used by Columbus in 1492. He also used it—and indeed this very page, which is a table of solar and lunar eclipses—in 1504. It was on his third voyage to America, and he was in the West Indies. Some hostile Indians had refused him food and supplies, and he said that unless they changed their mind he'd darken the moon. The Indians held out until they saw the moon grow dark; then they became so frightened that they brought Columbus everything he'd asked for. Reading from left to right across the table on the line starting with 1504 (the year), the "februā" and 29 means February 29th; the 16 and 5 relate to the degree of totality (in this case the earth's shadow was one and a quarter times the size of the moon); the 10 and 47 stand for 10:47 o'clock (the starting time of the eclipse); and the 14 and 13 stand for 13 minutes after the 14th hour (the end of the eclipse).

was once more on time. Incidentally, this change is vastly more radical than anything contemplated by our modern calendar reformers.

The Catholic countries put the new calendar into effect at once, but England and other predominantly Protestant countries continued to reckon by the Julian chart. In some places, both calendars were in effect. The result was a glorious mix-up, which was not resolved until Britain gave in and at long last adopted the Gregorian calendar, our present-day one.

George Washington was born before England took this step, so that, on paper, he lost 11 days out of his life. We celebrate his birthday on February 22, but in the Washington family Bible it is written that George was born on "ye 11th day of February"—according to the Julian calendar.

The chief defect in our calendar is its irregularity. We shouldn't have to memorize verses in order to know how many days there are in a month, nor should we have to make elaborate calculations to discover what day our birthday will fall on in 1948. In Yugoslavia, where more than one calendar is used (one being the Moslem calendar, described later), the peasants say, "A faulty clock may make you miss your train and lose your temper, but an erratic calendar will make you lose your harvest and with it your life's chance."

The famous little verse which we all know and recite to get the number of days in a month is older than the Gregorian calendar. It first appeared in Richard Grafton's almanac in 1572 under the title "A Rvle to Knowe How Many Days Euery Moneth in the Yere Hath." It ran:

*Thirty dayes hath Nouember,
Aprill, Iune & September.
February hath xxviij alone,
And all the rest haue xxxi.*

The jingle has many variations, one of the most interesting being the Quaker version used in Chester County, Pennsylvania:

*Fourth, eleventh, ninth, and sixth,
Thirty days to each affix;
Every other thirty-one,
Except the second month alone.*

In South America, they get the same results by clenching the fist and counting the months off on the knuckles and the spaces between them. Beginning with the knuckle on the index finger, those months having 31 fall on a knuckle, those 30 or less on a depression. July is on the little finger; August, like January, is on the knuckle of the index finger.

A similar method is used in France. It consists of counting the months on digits of both hands (with the exception of the thumbs) and the spaces between, starting with the little finger of the left hand. July falls on the left index finger, and August on the index finger of the right hand.

Many schemes have been put forward for improving the Gregorian calendar, and all are designed to regularize the number of days in the months and to fix annual holidays, particularly Easter. The late George Eastman, of camera fame, aroused interest in a calendar of 13 months, each containing 28 days. The 13th month was to go by the name of Sol.

Employers who paid their help by the month did not approve, because it meant an extra pay-day each year. Some persons did not become enthusiastic because they think 13 is unlucky and because we are sentimental about month names, especially when they mark events of importance to us as individuals. A June bride would protest violently against being sud-

denly transferred to Sol to become a creature without romance—a Sol bride. And so on.

At this moment, the 13-month calendar seems to have been definitely shelved, although there are a number of industrial establishments in northern New York which operate by its system of reckoning.

The most generally favored proposal and the one which has some likelihood of adoption is the so-called World Calendar. It is simple, practical, and it could be put into effect without disrupting our lives. Six changes do the trick. February grows to 30 days; April to 31; March, May, August, and December each lose a day. Here is how it will look:

Jan. 31	Apr. 31	July 31	Oct. 31
Feb. 30	May 30	Aug. 30	Nov. 30
Mar. 30	June 30	Sept. 30	Dec. 30

It is, you will observe, symmetrical, each quarter being like every other one. Each contains 91 days, and, what is more important, each begins on a Sunday and ends on a Saturday. The same is true of the year and the half-year. And not for one year—but for all time.

In this “changeless” calendar, the holidays will also perforce be nailed down. Lincoln’s Birthday would always fall on a Sunday; Memorial Day on a Thursday; and so on. When we celebrate our birthdays now, we simply observe the day of the month. Persons born under The World Calendar would celebrate the weekday as well. For others, their birthdays would no longer shift from year to year. This, of course, would be true of all anniversaries, too.

The rigidity of the calendar is accomplished by the little trick of stabilizing the year in four equal quarters of 91 days each for a total of 364 days. This leaves one day to be accounted for—the odd one which has upset a thousand calendars—and it is handled by adding it to the year without giving it either a number or a name.* It is simply a 24-hour period which might be observed as a festive occasion, but not permitted to upset the orderly rotation of the days. And so the calendar would remain stationary, and the years would begin as many think they should—on a Sunday.

For the record, this day, which would follow December 30 in The World Calendar, would be known as December Y. It has been suggested that it be called Year-End Day, and some have proposed making it an international holiday devoted to the cause of peace.

In leap year, the performance would be repeated, except that the extra, or intercalary, day would be inserted between June 30 and July 1. It will also be a holiday, and it would appear as June L (L for Leap).

For more than a hundred years, or ever since the Abbé Mastrofini thought of the idea, people have been fighting for this rational calendar. In

*EDITOR’S NOTE: It is called Year-End Day and placed on an extra Saturday, a world holiday, dated December Y or 31.

recent years, 30 calendar reform organizations in 28 countries, headed by the brilliant Elisabeth Achelis, President of the World Calendar Association, have carried the battle to the League of Nations.

Two years ago, the Chilean delegate to Geneva suggested that the proposal for calendar reform be submitted to the different nations for comment. This was done, and of the replies that have come in, 14 countries have gone on record as enthusiastically in favor of the proposal. Twenty-five were noncommittal in the best diplomatic tradition. Six made critical suggestions indicating opposition.

The next move is to summon representatives of the various countries to sit in an international convention which will draw up a treaty on the subject. There is reason to believe that the initiative may come from the United States. Dave Hennen Morris, former American Ambassador to Belgium, recently said, "The time is rapidly approaching for the United States Government, through its President, to appoint a special committee for the express purpose of studying and reporting officially on The World Calendar, with a clear exposition of its influence upon civil life. Upon the committee's findings would then be based the recommendation to call an international meeting."

Businessmen generally favor the idea. The International Chamber of Commerce and the American Statistical Association, as well as other groups, have gone on record as approving calendar reform. Louis J. Taber, Master of the National Grange, has applauded the proposal, and William Green, President of the American Federation of Labor, has favored it. Their approval is based upon the fact that the symmetrical calendar of equal quarters would make the conduct of business simpler and more efficient. Accounting would be easier; statistical comparisons of year-to-year production and profit figures would be more accurate; and agriculture, industry, and labor would all gain in various ways.

An understandable objection to The World Calendar comes from the sects which observe the Sabbath on Saturday—namely, the Seventh Day Adventists, Seventh Day Baptists, Jews, and others. They feel that the sequence of days should not be disturbed and oppose the reform on the ground that the Year-End Day would do precisely that—destroy the orderly stream of days, flowing since Biblical times.

But probably the strongest type of active objection to adopting The World Calendar is exemplified by a statement made to me recently by a member of the United States Weather Bureau. "It would cost us at least \$100,000 to change our past records so that they would be on a uniform basis with our future records,"* he said. "If we had that amount of extra money to spend, I'd rather see it used to establish new weather stations." Businesses of some kinds would be similarly affected. And then of course there are inertia and lack of interest—two major opponents (and all the harder to fight because of their passivity) of zealous World Calendar advocates.

Regardless of how we name the days and months or how we divide the periods, a calendar, in the final analysis, is simply a record of two facts: the time it takes the earth to rotate on its axis, which is a day, and the time it takes for the earth to revolve around the sun, which is a year. These are realities which do not change, but the ways of tallying them are as numerous as the races of men. There have been thousands upon thousands of systems, ranging from childish crude calendars to incredibly complex ones. And even today there are several hundred calendars in use besides the Gregorian calendar. Here in the United States, there are at least 20 which are used by foreign residents, chief among them being the Moslem and Jewish calendars.

They are all pretty much the same, however, and if we wanted a calendar which is fundamentally different, we would have to go to another planet. For example, on Mercury, which rushes around the sun more than four times as fast as our earth, we would have an 88-day year. On Venus, the year would be 225 days, and on Mars the year would be 687 days.

*EDITOR'S NOTE: This objection seems to be overestimated since most statisticians consulted agree the change from the Gregorian to The World Calendar is so slight that it would not be necessary to change past records.

Jupiter is even slower. A resident there would have seven moons to look at and one of his years would be equivalent to almost 12 of ours. The year on Saturn is about 30 of our years; on Uranus about 84; on Neptune almost 165; and a human being who lived a year on Pluto would have lived what corresponds to 248 years on earth.

The oldest calendar in use is the Chinese, which goes back more than 42 centuries. The Western calendar was officially adopted in 1912, but the majority of the Chinese people still go by the old system of reckoning. This is a calendar in which our week has no place. Instead, the month is divided into three periods of ten days each. One system, in use over 4,000 years ago and supposedly the invention of Ta Nao, Minister of Huang Ti, the first great emperor of China, counted the days in cycles of 60, this corresponding roughly to a six-month year of 60-day months. This was modified and now the unreformed Chinese calendar consists of 354 days, and is made to balance by the insertion of two extra months every five years. The month names according to one Chinese calendar are picturesque: Spring Showers, Corn Rain, Summer Rain, Moderate Heat, et cetera.

The first fixed date in history is 4236 B.C., which is the date established by the first of the ancient Egyptian calendars. The Hebrew calendar, which still is used in Palestine and Jewish communities throughout the world, is a melange of the Egyptian and the Babylonian calendars, with refinements. It goes back to the Biblical creation of the world, and the coming year, by its reckoning, is not 1939 but 5699.

The Hebrew calendar has 12 variable months, consisting of 353, 354, or 355 days. To bring it in accord with the solar calendar, seven months have to be intercalated during each 19-year period. In describing the Hebrew calendar, Rabbi Weitz said:

"The Jewish calendar, unlike the Gregorian, is based on days reckoned from evening to evening. The day begins at dusk with the appearance in the sky of three stars of the second magnitude. At that moment commence the Sabbaths, festivals, feasts, and fasts. The Hebrew day is divided into 24 equal hours. The night is divided into the four *watches*, as suggested in Biblical and Talmudic readings. The hour contains 24 *onot*. Each *onot* is divided into 24 *ittot* and each *ittot* into 24 *regaim* or seconds."

The old calendars were moon calendars. That is, they measured time in terms of how long it took the moon to travel around the earth. Anybody can determine that, for it simply means watching for the new moon and then counting the days until the next new moon. All primitive calendars were made this way. The Chinese, Hebrew, and Moslem calendars are all lunar, with devices for correcting the year.

Perhaps the best example of the use of moon calendars is provided by the desert Arabs. They depend entirely on observation of the new moon, so they do not know in advance whether a month will be 29 or 30 days in length. At sunset of the 29th day, they watch closely in the western sky for the first slender crescent. If it appears, the new month begins at once; if not, it begins the following day. Which reminds me of a story which shows that even in the calendar there may be a tang of adventure.

One day Jotham Johnson, of the University of Pennsylvania Museum, while crossing the Syrian Desert, beheld a troop of wild horsemen galloping down upon him and his party. All hands took firm hold of their rifles and prepared to make a stand.

The riders, however, had not come to rob or kill. All they wanted was a little calendar information. The night before had been cloudy and they clamored to be told whether the new moon had been seen at Deir, the town Johnson had come from. If it had, then Ramadan, the month of fasting, was over. If not, they would be obliged to stick it out for another 24 hours.

American Indians called the month "a moon," which is fairly accurate, inasmuch as its cycle comes to about 29½ days. Each moon has a name, and each tribe had different moon names. To give one example, the Ojibways' year ran as follows: Cold Moon, Snow Moon, Worm Moon, Moon of Plants, Moon of Flowers, Hot Moon, Buck Moon, Sturgeon Moon, Corn Moon, Traveling Moon, Beaver Moon, and Hunting Moon.

In the South Seas, the Tonga Islanders name their moons in terms connected with the yams they grow, their principal crop: Little Yams, Yams with Small Protuberances, Early Rain, Late Rain, Putting Forth Living Shoots, Dead Shoots, Laying

Earth, and so on. Ancient Japanese month-names included Awakening of Insects, and Grain in the Ear.

The calendar has been called the clock of the years and it is a name well chosen, because along with the observation of the moon and the sun came a skill in making devices which would measure smaller divisions of time—the minutes and the hours. What is believed to have been the first clock is a sun-dial which was found in Egypt and which is now to be seen in the British Museum. This is a horizontal wooden bar with an upright at one end. The upright throws a shadow which moves along notches.

Old as this is, it is not as ancient as the earliest physical device for recording the passage of days. The first physical calendar was found in the cell of an Amorite monk in Palestine 27 centuries ago. It was a board with holes in it, and the days were tallied by moving a stick from hole to hole.

The most startling of the old calendars is the Aztec's 24-ton calendar stone in Mexico. A second great stone was discovered in Mexico that is easily the most gruesome relic now in the possession of man. In the center of this great stone, which was used as a sacrificial altar, is a hole six inches deep and 18 inches in diameter. The polished surface is covered with symbols tracing the movement of the days and months and years.

In the sacrificial rites, the victim, bound hand and foot, was stretched upon the stone and held still by five priests. A sixth, wielding a razor-sharp knife made of volcanic crystal, cut out the victim's heart and dropped it into the hole. The average number of persons annually sacrificed was 20,000. But on the occasion of the dedication of the temple, several thousand men, women, and children were slaughtered in a week.

Farther south in Mexico and in Guatemala lived the Mayas, a remarkable people, and their calendar is one of the miracles of all ancient civilizations. Not only did they measure time by the sun and the moon; they also computed it by Mars, Venus, and other planets. Their year had 18 months of 20 days each, which came to 360 days. To compensate, they added on five days, a system which oddly enough was exactly the same as that worked out by the Egyptians, 10,000 miles away. The Mayas also stored up their leap days until there were 13, which made a week, according to their calendar. And so every 52d year there was an extra week.

The history of the calendar, it can be seen, is a fascinating one which marks a people and reflects their life. The proposal to revise the Gregorian calendar is in keeping with this thought, for we live in an age of efficiency that demands—and should have—a calendar which marches from month to month a trifle less temperamentally.

The ideal moment for making the shift to The World Calendar would be January 1, 1939, which falls on a Sunday. But that is far too short notice for the entire family of nations to act on the plan—and this is one act which one government cannot do alone. Almost equally good as a date for beginning the reform would be a year from now, because it would be possible to use December 31, 1939, which not only falls on a Sunday but which also would be eliminated in any case from the new calendar, as the first day of the new year.

If the reform fails to go through by the middle of 1939, it will best be put off until 1950, the next year in which January 1 falls on a Sunday.*

*EDITOR'S NOTE: The World Calendar can be placed in operation on the last day of 1944. December 30 in that year falls on a Saturday as it does in The World Calendar. The next day, December 31, would be considered as Year-End Day, an extra Saturday World Holiday. The following day, Sunday, January 1, 1945, would then be the first day of The World Calendar.

CHANGE IN MEMORIAL DAY

By CHARLES C. SUTTER

Director, The World Calendar Association

OBSERVANCE of Memorial Day this year on Thursday, May 30, calls attention to one of the many compelling arguments in favor of an improved calendar. The holiday this year cuts awkwardly into the work-week. Under the perpetual World Calendar year of 12 months and equal quarters, Memorial Day could be stabilized by advancing it to Monday, May 27, giving a welcome three-day week-end. Memorial Day will not occur on a Monday until 1949. A three-day week-end holiday would have obvious benefits for industry and labor alike and would be equally welcomed by families as well as by resorts and travel agencies.

There is nothing sacred about the date May 30, nor was there any reason for placing it on this particular day. The formal observance of Memorial Day, or Decoration Day, as it was popularly called for many years, dates from 1868. The graves of the soldiers who died in the Civil War had been decorated with flowers before that year, especially in the South. For example, the women of Columbus, Mississippi, laid flowers on the graves of both Union and Confederate dead in 1863. Mrs. Sue Landon Vaughn, a descendant of John Adams, the second President, on April 26, 1865, led a few women to the cemetery in Vicksburg and decorated the soldiers' graves there. And in May of the same year some women in Winchester, Virginia, formed the Stonewall Jackson Memorial Association in honor of General Turner Ashby, who was killed in a skirmish at Harrisonburg in June, 1862. On June 6, 1865, they went to the Confederate Cemetery in Winchester, said to be the first cemetery planned especially for the soldier dead in the South, and decorated the graves with flowers.

Adjutant General Chipman of the Grand Army of the Republic, the organization of Union veterans, early in May, 1865, suggested to General John A. Logan, the commander-in-chief, that arrangements be made for the organization to decorate the graves of the Union soldiers on a uniform date throughout the country. Approving of the plan, General Logan issued a general order to all the Grand Army posts—part of which follows:

"The thirtieth day of May, 1868, is designated for the purpose of strewing with flowers or otherwise decorating the graves of comrades who died in defense of their country during the late rebellion, and whose bodies now lie in almost every city, village and hamlet churchyard in the land. In this observance no form of ceremony is prescribed, but posts and comrades will in their own way arrange such fitting services and testimonials of respect as circumstances may permit. . . ."

Memorial Day on May 30 was primarily observed in the Northern

States. Rhode Island made it a legal holiday in 1874, Vermont in 1876 and New Hampshire in 1877. It is now a legal holiday in all the States and Territories save Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina and South Carolina. In Virginia, May 30 is observed as a Confederate Memorial Day. June 3 (the birthday of Jefferson Davis) is observed as Confederate Memorial Day in Louisiana and Tennessee (which also observes May 30 as Decoration Day); April 26, in Alabama, Florida, Georgia and Mississippi; and May 10, in North Carolina and South Carolina.

For some time there has been a growing feeling particularly in the Southern States that Memorial Day no longer represents a day to honor soldiers who died in the Civil War, but that it now belongs to the dead of all wars and an effort should be made to observe Memorial Day nationally on the same day. President Roosevelt in the course of his address on the battlefield of Gettysburg in 1934 voiced this sentiment when he said:

"On these hills of Gettysburg two brave armies of Americans met in combat. Not far from here in a valley likewise consecrated to American valor, a ragged Continental army survived a bitter Winter to keep alive the expiring hope of a new Nation; and near to the battlefield and that valley stands the invincible city where the Declaration of Independence was born and the Constitution of the United States was written by the fathers. Surely, all this is holy ground. It was in Philadelphia, too, that Washington spoke his solemn, tender, wise words of farewell—a farewell not alone to his generation but to the generation of those who laid down their lives here and to our generation and to the America of tomorrow. Perhaps if our fathers and grandfathers had truly heeded those words we should have had no family quarrels, no battle of Gettysburg, no Appomattox. As a Virginian, President Washington had a natural pride in Virginia; but as an American, in his stately phrase, 'The name of American, which belongs to you in your national capacity, must always exalt the just pride of patriotism, more than any appellation derived from local discrimination.' . . . It was an inspired prophet of the South who said: 'My brethren, if we know one another, we will love one another.' The tragedy of the Nation was that the people did not know one another because they had not the necessary means of visiting one another. Two subsequent wars, both with foreign nations, measurably allayed and softened the ancient passions. It has been left to us of this generation to see the healing made permanent. We are all brothers now in a new understanding."

Today more and more the nation is united in the observance of this important day—a day no longer considered merely as one of honor for fallen defenders of the Republic. It is increasingly being dedicated to world peace and order that "these dead shall not have died in vain, that this nation under God shall have a new birth of freedom, and that government of the people, by the people, for the people, shall not perish from the earth."

Under The World Calendar, Memorial Day stabilized on May 27 would serve as a beginning of the vacation period. A three-day week-end holiday would be most welcome, coming between two months that have just this one holiday.

SOME POPULAR MISCONCEPTIONS

By E. G. Hogg, F.R.A.S.

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(From the *Journal of the New Zealand Astronomical Society*, May, 1939)

WE ARE all liable to make mistakes on matters connected with the calendar; it is a difficult subject and we may well expect to find that in dealing with it writers have occasionally expressed themselves erroneously when they should have known better, and that many popular ideas thereon are quite wrong.

The American professor who doubted if all his colleagues were quite sound on the question of the occurrence of leap year was possibly somewhat pessimistic, but we know that, in one of his letters to Stella, Swift tells her that he has just discovered that leap year comes every four years and that all his life he had thought it came every three years. There are many who are not aware that the Paschal Moon which decides the date of Easter is a fictitious luminary which comes to the full 14 days after the previous real new moon thereby anticipating the real full moon by, on the average, three-quarters of a day. The following sentence from the late J. A. Froude's *Lectures on the Council of Trent*: "Philip died early, leaving two sons: Charles, born in the Low Countries in 1500, the first year of the century—a date easy to remember—and Ferdinand, born in Spain a few years later"—shows us that even a brilliant historian may be mistaken as to when a century begins or ends. If one of us were entitled to receive a pound a day, he would certainly be surprised if he were told that the hundredth payment was the opening one of the second series of payments. The well-known *Nineteenth Century* did not change its title to *The Twentieth Century and After* until the issue of the number for January, 1901.

After this preliminary excursion, let us come to the object of this paper, which is to note the errors in chronology which may arise in the passage from the Roman to the Christian Eras. Here it may be remarked parenthetically that there is some incongruity in using the English words, "Before Christ" and the Latin words, "Anno Domini" to distinguish the eras from each other, and it would be interesting to know at what date the A.A.C. or "Anno Ante Christum" of ancient usage was displaced in English-speaking communities by B.C.

In early times historians were little more than annalists who very naturally took as their starting point some event of signal national importance in their eyes. For the Romans such an event was the founding of the City of Rome, which occurred in the year 753 A.U.C. before the birth of Christ, and the computation of time by the Roman Era did not cease until many centuries of the Christian Era had elapsed. As late as 1415 A.D. the

Roman Era was used in Portugal in dating official documents and public instruments. Living in Rome in the Sixth Century was a venerable abbot, Dionysius Exiguus or Dionysius the Lowly, who is said to have possessed no mean knowledge of Latin and Greek. He was writing on that difficult subject—the time of Easter—when he learned that chronologists of his day were adopting the practice of calculating their years from the date of the accession of the Emperor Diocletian, i.e., they were introducing the Diocletian Era to their readers. Dionysius was unwilling to count his cycle of years, in a work dealing so closely with the chief festival of his church, from the date of accession of an impious and persecuting tyrant and he decided that his era of chronology should be computed from the earliest date sacred to the Founder of Christianity, and, when in the year 527 A.D. his chronological scheme was published, it began with March 25 of the year 1 A.D. Here then is the dividing line between the years reckoned B.C. and those reckoned A.D. There is no year named 0; the year 1 B.C. is followed by the year 1 A.D.

At this stage it may be well to acquaint ourselves with the correct scale to be adopted in computing the interval of time between two dates—one B.C. and the other A.D. Herschel states it as follows: "The sum of the nominal years B.C. and A.D. must be diminished by 1. Thus from January 1 B.C. 4173 to January 1 A.D. 1582, the years elapsed are not 5,755 but 5,754."

The failure to apply this rule has led to errors which made curious reading. Classical scholars selected 1935 as the year in which to celebrate the bimillennium of the poet Horace who was born in the year 65 B.C. The bimillennium of the poet Virgil, born in 70 B.C., was initiated by the Italian Government by elaborate ceremonies and the issue of memorial stamps in 1930. We see that in the case of each of these poets the number of years between either poet's birth and the bimillennial celebration thereof was not 2,000 years but only 1,999. In the eleventh edition of the *Encyclopaedia Britannica* two scholars, one an historian, appear to have gone astray on this chronological point. In the article on Augustus we read: "He died on August 19, A.D. 14, on the anniversary of his entrance on his first consulship 57 years before (43 B.C.)," and in that on Ovid it is stated that he was born on March 20, 43 B.C. and that "he died in his 61st year in A.D. 17." Coming to more recent times we find in Mr. H. V. Morton's book, *In the Steps of St. Paul*, the statement, "There is an ancient tradition that he (St. Paul) died in Rome, aged 68 years, in the year 67 A.D. If we accept this tradition we must imagine his birth to have occurred in the year 1 B.C." It is unnecessary to give further instances: enough has been written to show that the rule which should be followed is frequently broken.

With regard to the bimillennia of the poets Horace and Virgil, it may be noted that the Romans had the habit of counting inclusively, and to them "three days ago" meant the day before yesterday. This inclusive counting by which "every fourth year," was interpreted to mean "once in three years" nearly wrecked Caesar's calendar reform, as during the first 36 years after its initiation the priests decreed a leap year every three years. The resulting error of three days was corrected by Augustus who omitted leap years altogether for a period of 12 years, thus bringing the Julian calendar back into its proper sequence. This inclusive counting is doubtless associated with some of the errors to which attention has been drawn.

NEW BOOK FROM BELGIUM

Reviewed by the REVEREND EDWARD S. SCHWEGLER, D.D.

LES SECRETS DES CALENDRIERS A LA PORTEE DE TOUS par J. M. Oudin,
Tournai, Belgique, 1939.

M. OUDIN is a doctor of science and a professor at the Ecole Française in Hal, Belgium. He has produced a handy and clear exposition of what may be called the more technical aspects—indeed, of what he calls in his title the secrets—of our Gregorian calendar.

The main portion of the work goes thoroughly into all those points about the calendar which puzzle the average reader. We find here explanations of the *Dominical Letter*, the *Solar Cycle*, the *Lunar Cycle*, the *Golden Number*, the *Epacts*, the calculation of the *Easter* date, the *Roman Indiction*, the *Julian Period*, and related matters. For anyone taking his first steps into the domains of knowledge to which a study of our familiar calendar will lead, this book would form an excellent guide.

Besides an informing text, the work also contains several good and practical tables. One is a perpetual Julian calendar, giving the *Dominical Letter*, the *Golden Number*, and the Date of the Moon for any *Julian Date*. Still better is a "*New Perpetual Calendar*," covering two pages, which can be used for any Julian or Gregorian date. With the aid of this, one can find the correct version of the calendar for any particular year, the weekday for any particular date, the date of Easter for any year, and the dates of the principal movable Church feasts for that year. The comprehension of so many details in one table is rather a feat.

M. Oudin's book, apart from its dissection of our present calendar, takes on added significance because (to quote some notes on the work by the Abbé Chauve-Bertrand, eminent French authority) "it includes, and approves, a '*Discourse on the Reform of the Calendar*.'" "This," still quoting Chauve-Bertrand, "is a lecture delivered by M. Pierre Humbert, learned professor of mathematics and astronomy in the University of Montpellier on the occasion of the re-opening of one of the school years at the university."

In his interesting discourse, which is to be found at the end of the book, M. Humbert first makes reference to the slight error of about one day in 20 centuries* that exists in the Gregorian calendar, but he makes light of this comparatively small inaccuracy and indicates several feasible means of obviating it in the distant future.

With similar despatch, M. Oudin disposes of the Easter question, point-

*Editor's Note: This error amounts to an increase of 26 seconds every year according to P. W. Wilson, author of *The Romance of the Calendar*. It will require 3,323 years for this error to amount to one day.

ing out that religious authorities would find no insurmountable obstacle in placing Easter on some definite Sunday of the year.

But when M. Oudin comes to the proposal of stabilizing the whole calendar he gives himself pause. First, he weighs the 12-month plan against the 13-month (each, of course, with "supplementary" days), and finds that the former "would disturb ancient customs rather little," whilst the latter "would upset our customs violently, and would oblige us to abandon the semester and trimester, those subdivisions of the year whose practical usefulness is incontestable."

Unfortunately, one gathers from M. Humbert's text, as from some other continental works, that Americans are sturdy partisans of the 13-month plan. Anyone familiar with the progress of calendar reform activities in this country knows how mistaken this notion is. For some time now the only active and effective movement to stabilize the calendar in this country has come from The World Calendar Association, which, as everyone knows, or should know, proposes a 12-month plan.

On the whole, M. Humbert does not seem over-sympathetic to a complete stabilization of the calendar. Thus, for example, he emphasizes the fact that the week "has been known from the time of the Babylonians and Hebrews, who transmitted to the world the notion of a weekly rest day, and from the Greeks and Romans who gave the days the names we have retained." He also points out that the succession of these days, "always respected by the reformers, has unrolled uniformly and without a breakdown through the entire history of the world"; and that "the thoughtless abandonment" of the week "by the Convention (i. e., during the first French Republic, from 1792 to 1795), which replaced it by the *décade*, was not one of the least causes for the failure of the Republican calendar."

But one cannot agree with some of these theses. The Babylonians did not have a true seven-day week, and the origin of the latter among the Hebrews is veiled in the mists of time. It cannot, therefore, be demonstrated that the seven-day, uninterrupted week has rolled on "through the entire history of the world." As for the Republican calendar of France, there can be no comparison between it and a plan like The World Calendar. The former deserted the seven-day week altogether and substituted a ten-day period; the latter retains the seven-day week, emphasizes it, builds upon it. The occasional interruption of the mathematical septenary succession in modern plans for calendar reform is not even the vaguest shadow of the Convention's *décade*.

M. Humbert again reveals his lack of sympathy with proposals to stabilize the calendar when he says, "In summing up, we find that there is still hesitation, and that we are still far from a solution. And when everything is considered, the question may well be asked whether the proposed change is really necessary, and whether the inconveniences some are

pleased to point out are sufficient to justify a reform which, in spite of all one may say, is rather radical, and which would give to our calendar a dull monotony entirely devoid of all poetry. Are we really so much embarrassed by the fact that the same days of the week do not correspond to the same dates of the month? This co-existence of two series, the one independent of the other—isn't this, on the contrary, often valuable? And how many times does not the indication of the day correct or confirm that of the date? Although we welcome with sympathy all agreements regarding the fixation of Easter, a reform that is certainly and immediately useful, we are not in a hurry to applaud proposals which, for reasons that are not absolutely evident, upset completely a calendar that is almost irreproachable, and to which we are attached by a tradition of many centuries."

Let us first turn our attention to poetry. Who can say there is no poetry in The World Calendar? There is the poetry of symmetry and regularity and parallelism. An element of poetry, after all, is meter and rhythm. But on the other hand: if The World Calendar lacks poetry, so does a sextant, or a thermometer. One does not measure physical quantities with odes and satires, and couplets and quatrains. And the calendar, after all, is fundamentally a means of measuring time.

To take another point. That we are many times embarrassed by the fact that "some days of the week (better, *all* days of the week) do not correspond to some (better, *any*) dates of the month" has been amply set forth in article after article of this very *Journal of Calendar Reform*. Is it not embarrassing, for a very familiar example, to know one's birthday, but not to know on what day of the week one was born?

Further on M. Humbert tells us that the indication of the day will often confirm a date in our present calendar. Would it not do the same in The World Calendar? The date, "Wednesday, October 4," would naturally be a doubly confirmed date in either calendar. But the added advantage of that date in The World Calendar would be that "October 4" would at once mean "Wednesday," and that "The First Wednesday in October" would at once mean "October 4." Which system, may one ask, would produce the greater confirmation of dates?

Let us quote a final passage from M. Humbert that gives a total misconception of modern calendar reform: "One will naturally ask himself: was it for this ignoble task that the League of Nations, toward which are turned so many eyes full of hope, was founded? Are its labors to be confined to this? The Treaty of Versailles, the Locarno Pact, a non-aggression treaty, the rights of the people, ethnic frontiers, colonies and mandates, European equilibrium, the Orient against the Occident, Orontes against Tiber—these are the distressing problems of the present hour; and behold the augurs of the Quai Wilson, lost in interminable Byzantine discussions: asking without a smile if 2800 or 2900 will be leap years! We do not want

to scoff at them. These attempts to bring our calendar, necessarily inexact because human, as close as possible to the divine perfection of their astronomical models, and this chagrin which savants reveal at the thought of allowing even the slightest error to remain, even if this were only some seconds in several centuries—all these things seem to be connected in some way with one of the great preoccupations of the age: the desire to introduce purity and simplicity into all possible domains."

All the above is excellent satire, but it is not truth. The League of Nations specifically put aside the matter of the slight error in the Gregorian leap-year calculation. It concentrated on improving the yearly calendar, not the centurial arrangement of the leap years. If all that had come out of the League discussions were a suggestion about a new interpolation to correct the error of a day in 20 centuries, then M. Humbert would be justified in waxing ironical. But the League definitely passed over this detail and concentrated upon the various plans for making the *yearly*, not the *centurial*, calendar stable. And it has done the world the very great service of sifting out the various proposals and choosing finally the 12-month, equal-quarter plan. So M. Humbert's satirical arrows are a trifle misdirected.

In another point our writer might draw a distinction. He says that our present calendar has behind it "a tradition of many centuries," and that "it should not be disturbed until there is a well-nigh universal demand for such a change." Our calendar has behind it not a tradition, but numerous traditions. Some of these are, from a religious standpoint, essential, like the one demanding that there shall not be more than six days of work without an intervening period of rest and worship, or the one insisting that Easter always fall on a Sunday. But whether the well-known irregularities of our calendar, or the absolute septenary succession of the day of rest, or the present calculation of the Easter date, are essential, reasonable, and unshakable traditions is another question. Century-old but non-essential traditions have been set aside in ecclesiastical history numerous times. Witness, for example, the Gregorian reform itself, which dropped ten days from the calendar and abandoned the Julian computation of the leap year.

As for a "universal demand": the demand should be universal in the sense that most persons of education and authority should approve the change. Even the statement of the Holy See in 1924—that it would be "neither proper nor acceptable to depart" from "firmly established traditions" "without weighty reasons of universal concern"—does not imply there be a *physically* universal demand for a change. Such a demand would be well-nigh impossible. Here again one may appeal to the Gregorian reform, which, though approved by most people of education and good sense, was nevertheless flatly rejected by a number of Protestant states.

On the other hand, to return once more to our book: does not a work like this, with all its rules, and formulas, and tables, and "secrets," demonstrate in the best possible fashion that our calendar needs simplification? With *The World Calendar* in use, such a work would become overnight an historical curiosity. But meanwhile, the public must be increasingly educated along these lines. Those who believe in calendar reform must be untiring and unceasing in their efforts to make more and more widely known the advantages of a simplified calendar. Only so will the ground be fertilized and nourished, and one day bring forth the desired fruit.

CURRENT PRESS COMMENT

13-Month Experiment Ends

Chicago Journal of Commerce

Advocates of calendar reform have met with a setback in the action of Sears, Roebuck and Co. in returning to a calendar-month basis of reporting its sales after a ten-year experiment with 13 annual periods of four weeks each. It was ten or 12 years ago that the movement for an international fixed calendar of 13 months reached its crest in this country under the leadership of the late George Eastman.

Although the movement gained considerable ground among business concerns in this country it did not gain enough. Despite all the arguments and such actions as that of the National Association of Cost Accountants, whose board of directors adopted a resolution strongly favoring the 13-month year, business generally held to the Gregorian calendar, with its unequal months and with the same dates falling each year on different days of the week.

It appears the habit of considering business statistics on a 12-month basis was too strong, and while the new form had evident advantages from the accounting viewpoint, in the popular mind the "four weeks ending May 21" did not seem to carry the same idea as a full regular month.

The Sears, Roebuck statement explained in reporting February sales it abandoned the four-week period because relatively few other companies adopted it. There was comfort for reform advocates in the company's assertion to continue the 13-period year within the organization.

* * *

Proposals for calendar reform, which at times has been favored by many business concerns, take various shapes. In contrast with the proposal for a year of 13 months of four weeks each, is The World Calendar plan for retaining the 12-month basis but dividing the year into equal quarters of 91 days. Adherents of the latter project say they are not discouraged by the recent action of Sears, Roebuck and Company in discarding the 13-period year for its published sales reports. Charles C. Sutter, Director of The World Calendar

Association, writes: "Calendar reform is not dead. It has not 'met with a setback' due to the action of Sears, Roebuck and Company. And the 13-month calendar, which once had a skyrocket ascendancy in popular favor did not have to wait for the Sears, Roebuck coup de grace, but met its end several years ago. In fact, it has always had a rather precarious existence.

"In 1937 the League of Nations' Council at the suggestion of the Government of Chile, unanimously approved a proposal to submit a plan of calendar reform to all nations. There was no mention, before this tribunal of nations, of the 13-month plan. For the plan that Chile submitted was the 12-month equal-quarter calendar, known as The World Calendar. The result of this survey to date is that 14 nations have approved The World Calendar. So calendar reform is not shelved. On the contrary, the movement is gaining headway. So much so that it is now proposed to place the new calendar into operation by January 1, 1945."

Chamber of Commerce Review

London Chamber of Commerce Journal

In view of the importance now attached to statistics, and when all manner of new ideas are adopted in an effort to simplify and speed up business, it is surprising how many business men are content to jog along with our present cumbersome calendar, complicating, as it does, business which is already quite complicated enough. It surely must be obvious that a calendar which this country adopted in 1752, which allows four months 30 days each, seven 31, and one 28 with the exception of every fourth year when an extra day is thrown in, where Easter is allowed to wander from month to month, and where the quarters are not equal quarters at all, forms a definite hindrance to business and is hopelessly unsuited to modern needs. The London Chamber of Commerce has long recognized this and the advantages which would be gained from the adoption of a rational calendar. One cannot help but think that the reform will come sooner or later and, so far as business is concerned, the sooner the better.

EXCERPTS AND REVIEWS

Length of the Calendar Year

By H. W. BEARCE

National Bureau of Standards,
Washington, D. C.

In *The Scientific Monthly*, December, 1932

SINCE the calendar year contains sometimes 365 and sometimes 366 days, the average length is determined by the relative frequency of occurrence of these two numbers, that is, by the leap-year rule.

Under the Gregorian leap-year rule every fourth year is a leap year, except that of the century years only those years that are evenly divisible by 400 are leap years. That is, in a period of 400 years, three years that would normally be leap years, under the four-year rule, are not counted as leap years. The average length of the calendar year under the Gregorian leap-year rule is, therefore,

$$\begin{aligned} L_{\text{Gregorian}} &= 365 + 1/4 - 3/400 \text{ days} \\ &= 365.24250 \text{ days} \end{aligned}$$

On comparing this value with the length of the tropical year, as calculated from Newcomb's equation, it is seen that the calendar year is longer than the tropical year at the present time by 0.0003 day, or 25.92 seconds. Moreover, if the tropical year is shortening and if it continues to shorten in accordance with Newcomb's equation, this difference will increase as time goes on and in the course of some 3,300 years from the time when the two were in agreement an error of a full day will have accumulated as a result of this increasing difference between the tropical year and the Gregorian calendar year.

Using Newcomb's equation to project back into the past, it is found that in 3006 B.C. the length of the tropical year was 365.24250 days. That is, at that time the length of the tropical year was the same as the average length of the calendar year under the Gregorian leap-year rule. The Gregorian calendar was not in use at that time, and by the time it was adopted, in 1582 A.D., the tropical year was already shorter than the Gregorian calendar year by some 24.3 seconds.

Because of this error in the average length of the Gregorian calendar year, as

compared with the present length of the tropical year, it has been suggested by Marvin* that in revising our calendar we should at the same time adopt a more nearly correct leap-year rule. A more nearly correct rule has, in fact, already been tentatively put into effect by the Greek Orthodox Church, which in its adoption of the Gregorian calendar did not adopt the Gregorian leap-year rule, but in its stead, a more accurate one under which in a period of 900 years, seven quadrennial years that would normally be leap years are not counted as leap years. Under this leap-year rule the average length of the calendar year is

$$\begin{aligned} L_{\text{(Gk)}} &= 365 + 1/4 - 7/900 \\ &= 365.24222 \text{ days} \end{aligned}$$

It will be noticed that, to four decimal places, this value is in agreement with the present length of the tropical year.

Obviously, if the tropical year continues to shorten in accordance with Newcomb's equation this leap-year rule will, in the course of time, become incorrect even as the Gregorian rule has already become incorrect, and it, in turn, will need to be revised. However, it seems likely that before that time astronomers will have determined new and more exact values for the constants of Newcomb's equation, so that revision may be necessary.

Various leap-year rules are discussed in detail by Marvin in the papers referred to.

With further reference to the supposed necessity for adopting a more exact leap-year rule, it should, perhaps, be pointed out that this may be regarded by some as a case of "straining at a gnat and swallowing a camel," since even with a perfect leap-year rule the calendar and the tropical year are bound to be "out of step" by at least one-half day once in each four-year period. For example, if the calendar year and the tropical year are "in step," that is, begin at the same time, at the beginning of a four-year period, they will be "out of step" by one-fourth day at the end of the first year, one-half day at the end of the second year, three-fourths day

*C. F. Marvin, *Popular Astronomy*, May, 1923, and "Standards Yearbook" (Bureau of Standards), 1929.

(or one-fourth day in the opposite direction) at the end of the third year, and again "in step" at the end of the fourth year. It may, therefore, be unwise to be troubled over-much by a cumulative error of one day in about 3,300 years. It might be just as satisfactory to correct the Gregorian leap-year rule by simply dropping out an extra leap year once in each 3,300 years. The average length of the calendar year would then be $365 + 1/4 - 3/400 - 1/3300$, or 365.24220 days. This value is in agreement with the present length of the tropical year, as calculated at an earlier point in this paper. The discrepancy that has already accumulated could be corrected by counting as an ordinary year some year in the near future that would normally be counted as a leap year.

A Fixed Easter

In *The Modern Churchman*, Oxford, England, February, 1940

DR. H. D. A. MAJOR, *Editor*

WITH our present calendar the earliest day on which Easter can fall is March 22 and the latest April 25. This year Easter falls on March 24. This mobility of Easter is a cause of much inconvenience to many classes of people ranging from our educational authorities to those simple villagers whom tradition compels to plant their early potatoes on Good Friday. The practical conveniences of a fixed Easter are many. Although the demand for a fixed Easter was voiced as long ago as 1682 by Ouyard of Tours, nevertheless it has not yet been secured in any country. The reasons for this are roughly speaking three: (1) If Easter Sunday is to be stabilized, it is necessary to make other preliminary reforms in our present calendar. (2) Inasmuch as Easter Sunday is a Christian religious festival, it is necessary to secure the agreement of the ecclesiastical with the civic authorities if Easter is to be stabilized effectively. (3) Inasmuch as the whole modern world is becoming in many respects a single community, it is necessary to have the agreement of the majority of mankind to calendar change.

Our present Easter, due to our Christian festival being dependent on the mobile Jewish Passover and that Jewish

Passover being dependent upon the fickle moon, has been, as students of Church history know, a source of no little trouble to the Christian Church itself, and very nearly split it in two with its famous Quartodeciman controversy in the Second Century. Possibly because there are many other reforms which seem to be and are, indeed, more urgent. But the real reason we believe is that there have been serious divisions of opinion upon the larger calendar reforms which lie behind the securing of a stabilized Easter. Knowledge comes but wisdom lingers, and at last the advocates of the reformed calendar seem to be approaching agreement on right lines, namely, the abandonment of every proposal except the absolutely necessary essentials.

Calendar reformers seem to be now generally agreed to beginning the year on January 1, and to retaining the ancient local names for the months and days of the week. They propose to divide the year into four quarters of equal length: each quarter to begin on Sunday and end on Saturday, and each to contain three months—13 weeks—91 days. Yearly there will be an extra Year-End Day (a holiday), and every leap year a Leap-Year Day (a holiday), and Easter Sunday will be stabilized on either the second or more probably the third Sunday in April.*

The heads of the great Churches we believe will offer no opposition. If Great Britain leads the way the bulk of mankind will quickly follow. The actual situation, writes a well-known M.P., is: "The necessary Act of Parliament has already been passed. All that is needed is an Order in Council."

Two notable changes in our time were achieved by members of the Modern Churchmen's Union. It is to Lord Avebury that we owe our August Bank Holiday and to Mr. Willett that we owe our Summer-time. Shall we owe our fixed Easter, that is to be, to yet another of our members? The Great War was no small factor in securing for us the advantages of Daylight Saving. May we not hope that the present war will secure for us a fixed Easter?

*EDITOR'S NOTE: Churches are generally agreed on the second Sunday in April for a stabilized Easter.

FROM THE MAIL BAG

I hope that 1940 will show a still further advance in acceptance of The World Calendar.—Dr. L. S. Rowe, Director-General, Pan American Union, Washington, D. C.

We have long favored calendar reform and believe it will be only a question of time when it will be brought about. The 12-month calendar is, of course, the only form of modification which stands the slightest chance of adoption throughout the world.—Alden C. Noble, Chairman, Merchants Fire Assurance Corporation of New York, N. Y. C.

Please accept my thanks for the excellent publications about the calendar reform which you have kindly sent me.—Dionysios, Orthodox Archbishop of Warsaw, Metropolitan of Poland.

Some day I hope to see the continual dropping of the water of intelligence wear away the stone of prejudice and indifference, so that The World Calendar may find free access to its potential usefulness.—Rev. Dr. E. F. McGregor, Norwalk, Conn.

I have always been interested in calendar reform and I approve the type represented by your society. When I was president of the Academy of Arts and Sciences, I was glad to help through this organization a vote of approval for the new World Calendar.—Prof. G. H. Parker, Harvard University.

I think the present calendar gives universities as much trouble in arranging their programs each year as any other type of organization. Our Administrative Committee of the entire university spent about an hour recently in trying to arrange the University Calendar for next year because Mondays, etc., did not come in the right part of the month. The new calendar would be a great convenience which would obviate these difficulties for us. University people ought to be progressive enough to seize these advantages and render willing support.—S. C. Lind, Dean, Inst. of Technology, Univ. of Minn.

I continue to be very interested in this very desirable reform.—A. J. Hills, Canadian National Railways, Montreal.

For a long time I have been interested in proposals for a reform of the calendar, and have had many such proposals called to my attention; but I believe that none of them were as simple, or had as good a chance of universal adoption as the one you are advocating.—Rev. Raymund F. Wood, S. J., Spokane, Wash.

I hope to live to see The World Calendar adopted.—Dr. George Grant MacCurdy, Prof. Emeritus (Yale), Old Lyme, Conn.

What a great thing the new calendar would be for administrators of schools. It certainly would clear up many of our present problems.—W. R. Buell, Supt. of Schools, East Aurora, N. Y.

I believe with you that a unity of time would be a decided step in a direction of greater cooperation and understanding among nations.—Mrs. Frederic Beggs, Wyckoff, N. J.

For many years I have followed calendar reform, particularly through the American Association for Advancement of Science.—Dr. H. J. Van Cleave, Univ. of Ill.

As a retail merchant and druggist, I am in favor of The World Calendar as against the 13-month plan. The World Calendar will work *best*. It solves the calendar puzzle in the most scientific, and comprehensive style, and makes business records an easy matter for reports.—Prof. Harry L. Thompson, Salt Lake City.

I feel enthusiastic over this extremely simple, practical and permanent calendar. The present calendar always has been quite a handicap in our office. In order to determine on what day of the calendar a certain day of the church year (Sundays and Festivals) fell, we are obliged to use a specially and somewhat laboriously prepared tabulation for the last hundred years of the existence of our church work.—Rev. S. Michael, Statistician, Evangelical Lutheran Synod, St. Louis.

There appears no doubt, in my mind, that a change in our calendar is a much-needed reform.—Jacob Weis, Brooklyn.

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